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ABSTRACT

A teacher's guide for two sequential one-year commercial art courses for high school students is presented. Commercial Art I contains three units: visual communication, product design, and environmental design. Students study visual communication by analyzing advertising techniques, practicing fundamental drawing and layout techniques, creating silk-screen posters, and developing and printing photographs. Product design activities include describing elements and principles of design of various objects, constructing a prototype container, researching the market for various products, and designing a package. In environmental design, students design a house based on physical, emotional, and aesthetic needs, functions, traffic patterns, and energy conservation. Commercial Art II repeats the three units of Commercial Art I. The emphasis in visual communication is on graphic design, displays, illustration, and media/photography. Product design focuses on industrial design. Students create a product based on several factors of design. In the environmental design unit, students study urban planning by formulating solutions to community planning problems. Instructional and performance objectives, a suggested sequence for instruction, a list of materials needed, and suggested assessment measures are included for each unit. The document also contains a bibliography and lists resources such as organizations, periodicals, kits, handbooks, sources of materials, and professional organizations. (KC)

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COMMERCIAL ART I
and
COMMERCIAL ART II
An Instructional Guide

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Spring 1980

Montgomery County Public Schools
Rockville, Maryland

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ACKNOWLEDGMENTS

Montgomery County Public Schools and the Maryland State Department of Education acknowledge the importance of offering art instruction which can be associated directly with a career in art or a related field. In this guide, the growing importance of commercial art is recognized in terms of our communication needs, our consumer needs, and our need to become aware of a changing environment.

Visual communication and photography sections of this instructional guide were prepared by Frank Moran, Charles W. Woodward High School, and William Wilkerson, Rockville High School.

Various portions of this guide have been reviewed and evaluated by Ellen Talaat, Paint Branch High School. Planning, coordination, and final draft were prepared by Emil Hrebenach, Coordinator of Secondary Art, Montgomery County Public Schools.

INTRODUCTION

Commercial Art I and Commercial Art II are approved elective art courses designed to give interested students a wide variety of exploratory experiences related to consumer oriented design. This instructional guide for Commercial Art I and II was written for high school art teachers who, through experience, training, or interest, have some understanding of the three fieldsof commercial art commonly identified as visual communications, product design, and environmental design. The content of this guide is chosen to communicate the scope rather than the depth of concepts to be developed in these exploratory courses. Students' interests and abilities should serve as guides to determine the modification or further development of selected objectives. One-half credit will be granted upon successful completion of a semester of visual communication or a semester of product and environmental design. Portions of the units in media/photography are considered optional, depending on the availability of instructional materials, equipment, and facilities.

Any general art studio or drafting room can serve as a classroom for commercial art courses. In addition, access to a photographic darkroom is necessary to accommodate fully the lessons in photography. If a darkroom is not available, the units in media/photography may be adjusted to emphasize television production and filmmaking. Teachers may extend the units in product and environmental design by making use of the instructional guide titled *Environmental Design*. Regular art rooms can be used for instruction in commercial art if portable drawing boards and additional storage cabinets are provided. Tracing tables, an air brush, a wax machine, a videotape recorder, a phototypesetter, and a copy camera may be acquired for the long-range implementation of this program. Some of the tools and materials needed for these courses, such as T-squares, triangles, and tracing paper, are the same as those used in mechanical and architectural drawing courses. A few special pens, rulers, and other drawing tools would support the implementation of instructional objectives. Some books and instructional aids commonly used in industrial education and media courses may serve as references for some of the units described in this guide. Equipment which is commonly found in school print shops, media centers, and offices can also be used to enrich the learning experiences offered in these courses.

OVERVIEW

Commercial Art I and II are sequential one-year elective art offerings having one semester of Fundamentals of Art as a prerequisite. During these courses, students will explore some of the many vocational and professional opportunities in art which generally are directed toward the consumer. Studio experiences are designed to approximate closely those which may be encountered in good production studios. Whenever possible, students will make field trips to print houses and design studios where they will have opportunities to discuss job requirements with local artists.

While they acquire the practical skills and information needed to produce art work, students will begin to understand and use the design process. Design problems will be researched and analyzed, then developed through a series of stages to become two- and three-dimensional art and design. A basic goal of both courses is to familiarize students with a systematic way of solving design problems. As in scientific inquiry, a logical sequence of steps for arriving at a design solution will be:

1. Adopt the problem and set a goal.
2. Analyze the problem and collect information.
3. Define the problem.
4. Develop alternative solutions.
5. Select an alternative. (Involve users, if possible.)
6. Implement the solution.
7. Make an evaluation.

Student efforts in visual communication, product design, and environmental design will consider universal needs for aesthetic and functional environments. Through these lessons, students will become more aware of the impact of commercial art in their lives and begin to recognize the ethical and moral responsibilities of designers.

An introductory unit in Commercial Art I explores the basic skills required for the production of advertising and promotional art. Commercial Art I students also will consider some of the common factors that direct the creation, production, and promotion of consumer goods. Other units will explore the techniques of product and environmental design; media; photography; and illustration. A similar sequence of units is prescribed for Commercial Art II, in which additional concepts and skills will be explored and developed. The last unit of the second year of study is a culminating activity directly related to a school production or service such as a play, newspaper, exhibit, or special event.

The instructional objectives defined for this two-year sequence of Commercial Art I and II are derived from the *Program of Studies* descriptions of these courses. For more effective development of the units in this document, certain of these instructional objectives have been arranged in somewhat altered order from that in which they appear in the *Program of Studies*. For ease of identification, the instructional objectives have been numbered sequentially with 1-13 for Commercial Art I and 1-8 for Commercial Art II.

Commercial Art I

Upon completion of the first semester of Commercial Art I, the student should be able to:

- identify and describe aspects of visual communication in everyday life and in the design studio
- demonstrate basic drawing and composition skills related to visual communication
- demonstrate basic graphic design techniques and processes such as lettering and layout

- demonstrate graphic design skills through the production of signs or displays
- demonstrate some of the styles, processes, and techniques of the commercial illustrator
- describe or demonstrate some of the processes related to communication media production

In addition, upon completion of the second semester of Commercial Art I, the student should be able to:

- identify and describe the aesthetic qualities of photographs and photo displays
- prepare photographs and art work for display or presentation
- describe and demonstrate the design process as applied to packaging
- demonstrate a knowledge of some of the social, technological, and ecological systems that affect the built environment
- recognize the importance of the environment as a factor in architectual design and the importance of architectural design as a factor in preserving the environment

For either the one- or two-semester course, depending on the availability of instructional materials, equipment, and facilities, the student should be able to:

- demonstrate the knowledge and skills necessary to operate and care for a still photograph camera
- demonstrate procedures for processing film and printing black-and-white photographs

Commercial Art II

Upon completion of one semester of Commercial Art II, the student should be able to:

- demonstrate production processes related to graphic arts such as type specification, paste-up, copy camera operation, and negative stripping
- apply graphic- and display-art techniques to the production of a display
- create commercial illustration for several types of printed materials
- demonstrate a knowledge of several basic filmmaking processes, including animation
- identify and analyze the compositional and expressive qualities of photographic prints

Upon completion of the second semester of Commercial Art II, the student should be able to:

- apply an understanding of the design process to an environmental and industrial design problem
- conceptualize some relationships between various components of a built environment
- demonstrate knowledge of visual communication, product design, or environmental design through a practical production effort

For either the one- or two-semester course, given the necessary instructional materials, equipment, and facilities, the student should be able to:

- demonstrate advanced film processing and photo printing techniques

These instructional objectives support those MCPS Goals of Education which state: "The school must help each student gain:

- knowledge of the nature of creative and performing arts
- experience with a wide variety of art forms
- perspective for developing his [/her] own aesthetic criteria and tastes
- understanding of the contribution of the arts to human communication."

The performance objectives described in this guide are intended to serve as a model rather than as a prescription for instructional activities. Teachers are encouraged to incorporate available resources and skills in developing these performance objectives or any additional ones. It is important that students be given the opportunity to explore the wide range of commercial art in order to make informed judgments about the field.

COMMERCIAL ART I

GENERAL COURSE OUTLINE AND UNIT OBJECTIVES

The following sequence of units for Commercial Art I is recommended. Local program or individual student needs and the availability of equipment or facilities may affect the scope or length of these units. Performance objectives are described to illustrate the manner in which instructional objectives may be achieved. Instructional objectives and performance objectives are listed in the order in which they appear in this instructional guide.

UNIT I. VISUAL COMMUNICATIONS

A. INTRODUCTION

Instructional Objective 1. *The student should be able to identify and describe aspects of visual communication in everyday life and in the design studio.*

. **Performance Objectives:**

1. Identify the psychological and sociological factors involved in advertising art.
2. Describe the organization and operating procedures of an art studio.

Instructional Objective 2. *The student should be able to demonstrate basic drawing and composition skills related to visual communication.*

. **Performance Objectives:**

1. Demonstrate fundamental drawing board skills.
2. Translate mechanical or architectural drawings into illustrations.
3. Demonstrate fundamental lettering and spacing techniques, using the media and tools of graphic art production.
4. Design and prepare a copy-ready layout using found illustrations and traced or grid enlarged lettering.

B. GRAPHIC DESIGN

Instructional Objective 3. *The student should be able to demonstrate basic graphic design techniques and processes such as lettering and layout.*

. **Performance Objectives:**

1. Demonstrate an understanding of common graphic arts vocabulary and processes.
2. Produce a simple graphic design following art studio procedures.
3. Identify and produce five basic layout compositions.
4. Apply studio methods, practices, and procedures to a finished paste-up mechanical.

5. Identify and compare the mechancial reproduction processes available in the school.

C. DISPLAYS AND SIGNS

Instructional Objective 4. *The student should be able to demonstrate graphic design skills through the production of signs or displays.*

. **Performance Objectives:**

1. Design and produce a three-color silk-screen poster.
2. Demonstrate the use of the split image as the key element in a poster design.

D. ILLUSTRATION

Instructional Objective 5. *The student should be able to demonstrate some of the styles, processes, and techniques of the commercial illustrator.*

. **Performance Objectives:**

1. Compare and discuss commercial illustrations in terms of style, process, and technique.
2. Develop a black-and-white illustration for a newspaper advertisement.
3. Demonstrate the use of color as an accentuating or unifying element in commercial illustration.
4. Design a composite illustration using commercial photos for subject material.
5. Produce illustrations for selected themes.
6. Make a drawing in the style of scientific illustration using a natural form as subject matter.
7. Illustrate an idea or give directions using cartoons or simplified drawings.

E. MEDIA/PHOTOGRAPHY

Instructional Objective 6. *The student should be able to describe or demonstrate some of the processes related to communication media production.*

. **Performance Objective:**

. Program a series of pictures and sounds from a prepared script to produce a videotape.

Instructional Objective 7. (Optional) *The student should be able to demonstrate the knowledge and skills necessary to operate and care for a still photograph camera.*

. **Performance Objectives:**

1. Describe and demonstrate the optic principles of camera design.
2. Demonstrate the use of focal length adjustments on a camera.
3. Demonstrate how shutter speed affects the resulting photograph.

Instructional Objective 8. (Optional) *The student should be able to demonstrate procedures for processing film and printing black-and-white photographs.*

. **Performance Objectives:**

1. Demonstrate procedures for mixing and storing photo processing chemicals.
2. Describe the function and use of photo chemicals.
3. Demonstrate the use of the photo developing tank.
4. Demonstrate the processes for printing black-and-white photographs.

Instructional Objective 9. *The student should be able to identify and describe the aesthetic qualities of photographs and photo displays.*

. **Performance Objectives:**

1. Develop criteria for the selection and composition of subject matter.
2. Identify aesthetically pleasing forms and compositions in photographs.

Instructional Objective 10. *The student should be able to prepare photographs and art work for display or presentation.*

. **Performance Objectives:**

1. Demonstrate dry-mounting processes.
2. Demonstrate matting techniques.

UNIT II. PRODUCT DESIGN

A. PACKAGE DESIGN

Instructional Objective 11. *The student should be able to describe and demonstrate the design process as applied to packaging.*

. **Performance Objectives:**

1. Analyze examples of product design, using criteria related to function, aesthetics, and human needs.
2. Research, design, and construct a prototype of a package or container.

B. *(To be developed)*

UNIT III. ENVIRONMENTAL DESIGN

A. ARCHITECTURE — RESIDENTIAL

Instructional Objective 12. *The student should be able to demonstrate a knowledge of some of the social, technological, and ecological systems that affect the built environment.*

. **Performance Objective:**

. Analyze personal preferences for residential design and develop an interpretive model.

B. ARCHITECTURE — MODULAR DESIGN

Instructional Objective 12. *The student should be able to demonstrate a knowledge of some of the social, technological, and ecological systems that affect the built environment.*

. **Performance Objectives:**

1. Recognize module-based components in architectual design.
2. Design a multi-unit structure using module-based components.

C. ARCHITECTURE AND CLIMATE

Instructional Objective 13. *The student should be able to recognize the importance of the environment as a factor in architectural design and the importance of architectural design as a factor in preserving the environment.*

. **Performance Objective:**

. Identify several structural techniques which will accommodate excessive sun, wind, or rain.

D. RECREATIONAL ENVIRONMENTS — AMUSEMENT PARKS

Instructional Objective 13. *The student should be able to recognize the importance of the environment as a factor in architectural design and the importance of architectural design as a factor in preserving the environment.*

. **Performance Objective:**

. Plan an amusement park for general public use where facilities are integrated with natural elements.

Visual Communications

A. INTRODUCTION

Instructional Objective 1. *The student should be able to identify and describe aspects of visual communication in everyday life and in the design studio.*

- **Performance Objective 1:**
  - Identify and discuss the psychological and sociological factors involved in advertising art.

Suggested Sequence for Instruction:

1. Display examples of various types of commercial art.
2. In a class discussion, trace the history of advertising art from the ancient craftsman's stamp or insigne to the radio and television commercials of today.
3. Read sections pertaining to the psychology of advertising in *Advertising Graphics* by Bockus and *Who Designs America* by Holland. Teachers should read *The Hidden Persuaders* and *The Wastemakers* by Packard.

   Research companies have provided these facts about newspaper and magazine readers:

   - An ad headline with news is read more often than a headline without news.
   - Readers will avoid sentences with more than 12 words.
   - Photographs are noticed more often than drawings.
   - Ninety percent of readers look at the headline or illustration and seldom read the body copy.
4. Collect, display, and discuss the significance, appeal, and quality of various examples of advertising. Display a copy of *Visual Persuasion* by Baker and refer to its illustrations. Discuss the use of superlatives and repeated statements or images. Refer to government regulations that affect advertising and the role of consumer groups in controlling advertising. Cite examples such as the restrictions placed on cigarette advertising and the regulations that specify how product weight or volume is to be indicated on a package.

Instructional Materials:

(B) *Visual Persuasion* by Stephen Baker

(B) *Advertising Graphics* by H. William Bockus

(B) *Who Designs America* by Lawrence Holland

Assessment Measure:

- Have each student select a poster or advertisement that appeared 50-75 years ago, then design one to sell the same product today; or select a current advertisement and redesign it to appeal to a different age group.

- **Performance Objective 2:**

  - Describe the organization and operating procedures of an art studio.

Suggested Sequence for Instruction:

1. Arrange for and accompany students on a field trip to a local commercial art studio, or view filmstrips on careers. (See Appendices A and B and the filmstrips listed under Resources.)
2. Discuss the organization and function of all employees of the art studio.
3. Refer to *Commercial Art Techniques* by Ralph S. Maurello.
4. Match job descriptions to job titles. Working in groups of 6 to 8 students, construct an organization chart for a commercial art studio.
5. Demonstrate techniques for chart making.

Instructional Materials:

(B) *Commercial Art Techniques* by Ralph Maurello

Assessment Measures:

- Describe the personnel structure of the art studio and the functions of staff members.
- Create a diagram illustrating the organization of an art studio; give a description of each job you specify.

  Does the diagram accurately place job positions in their proper order?

  Do the job descriptions accurately match the job titles?

Instructional Objective 2. *The student should be able to demonstrate basic drawing and composition skills related to visual communication.*

- **Performance Objective 1:**

  - Demonstrate fundamental drawing board skills.

Suggested Sequence for Instruction:

1. Demonstrate the proper use of the tools needed to lay out margins and legends.
2. Post pictures and names of drawing tools.

3. Students use T-square angle and scale to square a paper and lay out proper margins and legend.

4. Produce pencil line exercises (plaids and radial design, etc.) using H, 2H, and 4H pencils.

5. Letter and label legend according to accepted studio procedures.

Instructional Materials:

(B) *Advertising Graphics* by H. William Bockus

(B) *Commercial Art Techniques* by Ralph S. Maurello

Assessment Measures:

- Administer a vocabulary test which includes terms dealing with tools, papers, and drawing techniques.

- Display student work and conduct critique with these criteria: (1) proper line weight and connections; (2) square margins and legend; (3) correct dimensions.

- **Performance Objective 2:**

  - Translate mechancial or architectural drawings into illustration.

Suggested Sequence for Instruction:

1. Demonstrate the procedure for making an isometric drawing from a three-view mechanical drawing.

2. Have students produce isometric drawings from selected three-view drawings.

3. Explain and demonstrate perspective and orthographic (elevation) projection. (Refer to *Perspective Drawing* by French.)

4. Have students produce perspective or orthographic views of a three-dimensional form.

Instructional Materials:

(B) *Perspective Drawing* by Thomas E. French

(B) *Rendering with Pen and Ink* by Robert W. Gill

Assessment Measure:

- Display student work and conduct a class critique. Use (1) neatness, (2) accuracy, and (3) proper placement on sheet as criteria.

- **Performance Objective 3:**

  - Demonstrate fundamental lettering and spacing techniques, using the media and tools of graphic art production.

Suggested Sequence for Instruction:

1. Display examples of lettering styles.

2. Demonstrate techniques for tracing and enlarging letters using a grid system. Include spacing and page placement.

3. Using tracing paper and grid patterns, have students draw guidelines; plan spacing according to directions; and copy examples of basic letter styles including *cursive, Gothic, Roman,* and *text.*

4. Following a demonstration, have students design and produce a title using calligraphy.

5. Display and demonstrate examples of lettering using mechanical (Leroy) and letter aid processes (press type, etc.).

6. Have students design and produce a letterhead using mechanical and letter aid processes.

Instructional Material:

(B) *Graphics Master* by Dean Lem

Assessment Measure:

. Distribute self-evaluation forms and ask students to rate all lettering assignments using the following criteria:

Use of guidelines

Accuracy of spacing

Neatness of letter form

Proportion and design of letters (calligraphy)

Composition

. **Performance Objective 4:**

. Design and prepare a copy-ready layout using found illustrations and traced or grid-enlarged lettering.

Suggested Sequence for Instruction:

1. Display and discuss copy-ready layouts for a variety of publications.

2. Have students select black-and-white illustrations from magazines and newspapers.

3. Have students create titles, subtitles, and copy to go with selected illustrations. Letters may be traced or copied, using a set of grids.

4. Arrange elements into a unified, eye-appealing composition.

Instructional Materials:

(B) *Lettering* by John Cataldo

(B) *Layout Four: Printing Design and Typography* by Charles Felton

Assessment Measure:

- Display finished layouts and conduct a class critique with these criteria in mind: balance, weight, unity, movement, proportions.

B. GRAPHIC DESIGN

Instructional Objective 3. *The student should be able to demonstrate basic graphic design techniques and processes such as lettering and layout.*

- **Performance Objective 1:**

  - Demonstrate an understanding of common graphic arts vocabulary and processes.

Suggested Sequence for Instruction:

1. Present and review a vocabulary list of graphic design terms.
2. Show the film *Graphic Arts* and discuss processes of graphic reproduction.
3. Invite a guest speaker from a local graphic arts studio to discuss studio organization and production problems.
4. Accompany the class on a field trip to a "production" art department and print shop. Visit those related to MCPS if commercial shops are not available.
5. Prepare and discuss a list of standard editorial symbols used by the graphic designer.
6. Using a professional vocabulary, discuss the operation and important aspects of the art department just visited.

Instructional Materials:

(B) *Advertising Graphics* by H. William Bockus

(M) *Graphic Arts,* MCPS Film #6550

Assessment Measures:

- Administer a test on the vocabulary and editorial symbols used by the graphics designer.
- Have students describe the various functions and operations of a production art department.

- **Performance Objective 2:**

  - Produce a simple graphic design following art studio procedures.

Suggested Sequence for Instruction:

1. Review studio methods for production and presentation.
2. Display examples of logos and discuss their characteristics and applications.
3. Students develop a logo (trademark) in black and white with half tones, using mechanical aids.
4. Add color to these logos and produce a color separation, using mechanical color aids on acetate overlays.

Instructional Material:

(B) *Commercial Art Techniques* by Ralph Maurello

Assessment Measures:

- Have students prepare and present finished art work in accepted form with tracing paper overlay and Kraft paper cover sheet.
- Display finished work of students and conduct a class critique.

- **Performance Objective 3:**

  - Identify and produce five basic layout compositions.

Suggested Sequence for Instruction:

1. Using examples, discuss five basic layout compositions: group, axial, path, grid, and band.
2. From magazines and newspapers, have students collect illustrations, logos, and blocks of copy.
3. Organize these collected elements into each of the five basic layout compositions.

Instructional Material:

(B) *Advertising Graphics* by H. William Bockus

Assessment Measures:

- Display student-made basic layout compositions and conduct a class critique.
- Have students identify the type of layout represented in each example displayed.

- **Performance Objective 4:**

  - Apply studio methods, practices, and procedures to a finished paste-up mechanical.

Suggested Sequence for Instruction:

1. Demonstrate and display examples of the following procedures: overlay, registration, cropping, trimming, stripping, and presentation.

2. Using one of the five previously produced layouts and collected illustrations and copy, the student should develop a paste-up mechanical according to given specifications.

3. Incorporate the above procedures into a paste-up mechanical.

Instructional Material:

(B) *Commercial Art Techniques* by Ralph Maurello

Assessment Measure:

- Display finished paste-up mechanicals and conduct a class critique.

- **Performance Objective 5:**

  - Identify and compare the mechanical reproduction processes available in the school.

Suggested Sequence for Instruction:

1. Using a selected piece of work from the previous assignment, enlist the assistance of the media specialist, in helping students reproduce their work through each of the processes available (both transparent and opaque): Xerox, Diazo, Thermofax, mimeograph, ditto master, etc. Each student should have the opportunity to use each machine, if possible.

2. Have students exchange copies of their reproductions.

Assessment Measures:

- Administer a written test on the operation of the various machines used.

- Ask students to compare the results of the different processes in terms of clarity, aesthetic quality, and completeness of detail.

- Conduct a class discussion of the possible applications and limitations of each reproduction process.

C. DISPLAYS AND SIGNS

Instructional Objective 4. *The student should be able to demonstrate graphic design skills through the production of signs or displays.*

- **Performance Objective 1:**

  - Design and produce a three-color silk-screen poster

Suggested Sequence for Instruction:

1. Review poster design from an historical point of view. Refer to *The Rise and Fall of the Poster* by Richards.

2. Display examples of posters, both student and professional work.

3. Review all aspects of poster design: letter style, subject material, potential audience, colors to be used, method of reproduction, limitations of media.

4. Direct students to produce several thumbnail sketches of ideas for posters and select the best one for printing.

5. Review silk-screen block-out methods. Include cut film, tusche, and photosensitive film. Review screen stretching procedures.

6. Each student should prepare a screen and then print and mat his/her best poster.

Instructional Materials:

(B) *The Rise and Fall of the Poster* by Maurice Richards

(B) *Making Posters* by Vernon Mills

(B) *The Complete Screen Print and the Lithograph* by John Ross and Clare Romano

Assessment Measures:

- Rank order the copies in the printed edition.
- Display finished work of students and conduct a class critique.

Performance Objective 2:

- Demonstrate the use of a split image as the key element in a poster design.

Suggested Sequence for Instruction

1. Choose pictures of one or two performers involved in a sport such as hockey, ballet, skiing, or car racing; and enlarge their shapes to poster size.

2. Cut out and split each shape vertically to provide two interesting silhouettes. Align cut edges on opposite sides of a poster. Reproduce this poster and place them in line a few inches apart. It will appear as though a figure is entering the composition from one side and exiting the other.

3. When you have finished a full-size "rough" in pencil on white background, start laying in *flat* color and try to retain the impact of the positive and negative shapes.

Assessment Measure

- Display student work and compare the extent to which positive and negative spaces are well balanced in each composition.

D. ILLUSTRATION

Instructional Objective 5. *The student should be able to demonstrate some of the styles, processes, and techniques of the commercial illustrator.*

Performance Objective 1:

- Compare and discuss commercial illustration in terms of style, process, and technique.

Suggested Sequence for Instruction:

1. Display a large variety of examples of illustrations and discuss the techniques involved. Include medical, technical, fashion, and display examples.
2. A variety of illustration styles and techniques should be collected, grouped, and mounted for easy comparison by each student.

Instructional Material:

(B) *Graphic Design: Visual Comparisons* by Alan Fletcher, Colin Forbes, and Robert Gill

Assessment Measure:

- Have students display some examples of commercial illustrations and discuss with the class why they like their choices; how they think each was done (medium used); where each could be most effective; what age or type of person each would appeal to, etc.

Performance Objective 2:

- Develop a black-and-white illustration for a newspaper advertisement.

Suggested Sequence for Instruction:

1. Explain and demonstrate the procedure for developing an illustration for an advertisement, from thumbnail sketch to camera-ready art.
2. Post examples of each step.
3. Have students reproduce the value and line weight of several different newspaper illustrations on a tracing paper overlay, using a variety of media.
4. Ask students to compare the styles and techniques.
5. Conduct a discussion of the relationship of drawing style to the type of product advertised.

Assessment Measures:

- Each student should plan and produce a photo-ready black-and-white newspaper illustration.
- Ask that each student display work and participate in a class critique.

Performance Objective 3:

- Demonstrate the use of color as an accentuating or unifying element in commercial illustration.

Suggested Sequence for Instruction:

1. Display examples of commercial illustrations having color accents.

2. Begin the discussion of the psychology of color. Review color theory.

3. Direct students to produce black-and-white illustrations using a water color wash to create a mood or to draw attention to a particular area.

4. Each student should produce a full color illustration emphasizing one color.

Instructional Material:

(B) *Commercial Art Techniques* by Ralph S. Maurello

Assessment Measures:

- Students should display work and participate in a class critique.

- Ask that each student explain his/her use of color in terms of the mood or image intended.

Performance Objective 4:

- Design a composite illustration using commercial photos for subject material.

Suggested Sequence for Instruction

1. Collect 10 to 20 photos from magazine scrap or newspaper. Include action figures as well as objects suggesting familiar story themes. (Autos, motorcycles, race cars, or horses could be related to "the chase" in racing stories; dark interiors, old mansions silhouetted against a skyline, antique furniture, candelabra, or a staring face would create a mystery story atmosphere.) In selecting research material, pick photos that have unusual silhouettes. The outlines of objects are important in composition. If the chosen photos are of people with their hands at their sides; if the forest, the house, or the cars are without distinctive shapes — no "bays" or "peninsulas" — it will be difficult to arrange a collage with interesting negative areas.

2. Lay tracing paper over the pictures you have selected and make dark outlines of them. Foreground shapes should be somewhat larger than those selected for the less important background.

   Outline drawings should be on separate pieces of tracing paper so they can be moved around easily to find the best arrangement. Create new shapes if necessary to improve upon the composition. Parts of objects can be moved or added.

   Leave one-third — or no less than one-fourth — of your background untouched. Shapes should be placed close together in a patch to make an interesting silhouette.

   Arrange tracings on a 12 x 18 sheet of paper. Check arrangement with the teacher. Tracings may be taped down to the paper to hold them in place.

3. Place a large piece of tracing paper over this pathlike arrangement, taping it down at the corners and tracing all the outlines of the images. Do this very precisely. Be sensitive to the outlines of both positive and negative areas, as they will make or break your composition. This is probably the most important step in the entire unit.

Lift up master tracing and transfer to the 12 x 18 paper. If selected photos are too bright and gaudy, modify or subdue the chroma. Black-and-white photos will allow freedom to use colors that fit the composition.

Assessment Measure

- Display all student compositions and compare them for the effective use of positive-negative space.

- **Performance Objective 5:**

  - Produce illustrations for selected themes.

Suggested Sequence for Instruction:

1. Display and discuss the characteristics of illustrations accompanying several magazine stories. Summarize each story to point out the basis for the illustration.
2. Review illustration techniques.
3. Have each student select a short story or a poem and create an illustration which accurately reflects the content.

Instructional Materials:

(B) *Drawing with Pen and Ink* by Arthur L. Guptill

(B) *Graphic Design: Visual Comparisons* by Alan Fletcher, Colin Forbes, and Robert Gill

(P) *Graphic Annual* (current issue)

(P) *Illustrations* (current issue)

(B) *Illustrators at Work* by Robin Jacques

Assessment Measures:

- All student illustrations should be displayed for viewing by the class.
- Have each student read or summarize aloud a story or a poem he/she has illustrated. Class members should try to identify the illustration intended to accompany each selection read.

- **Performance Objective 6:**

  - Make a drawing in the style of scientific illustration, using a natural form as subject matter.

Suggested Sequence for Instruction:

1. Display examples of scientific and technical illustration.
2. Discuss the importance of accuracy and the unique ability of an artist to emphasize certain details, something a camera cannot do so well.

3. Each student should bring to class a small uprooted weed or other plant with roots intact and preferably bearing flowers or seed pods.

4. Using pencils, each student will draw the entire plant as accurately as possible.

5. Finally, each will make a detailed illustration of a small portion of the plant; e.g., leaf, flower, or seed pod.

Assessment Measure:

- Have students compare finished work with the plant itself.

- **Performance Objective 7:**

  - Illustrate an idea or give directions using cartoons or simplified drawings.

Suggested Sequence for Instruction:

1. Display examples of cartoons and familiar daily comic strips.

2. Discuss social implications and history of comic strips.

3. Develop a "comic strip" character and use it in a three-frame strip to convey an idea to the reader.

Instructional Material:

(B) *The Art of Walt Disney* by Christopher Finch

Assessment Measures:

- Have students display finished comic strips.

- Have students write interpretations of the ideas presented in each of the strips displayed.

E. MEDIA/PHOTOGRAPHY

Instructional Objective 6. *The student should be able to describe or demonstrate some of the processes related to communication media production.*

- **Performance Objective:**

  - Program a series of pictures and sounds from a prepared script to produce a videotape.

Suggested Sequence for Instruction:

1. Identify and discuss common TV formats such as news shows, entertainment series, educational information shows, and specials. Determine the objective and the main staging or filming techniques often used in each format.

2. Discuss the interrelation of the two elements of television — auditory and visual. Demonstrate the importance of each element by first viewing part of a show with sound and picture, next without sound, and last without picture.

3. View a television commercial and count the number of scenes projected. Categorize these as: Extreme Long Shot (ELS, XLS); Long Shot (LS); Medium Shot (MS); Closeup (CU); Extreme Closeup (ECU); Shoulder Shot (SS); Over-the-Shoulder Shot (OSS); Two-Shot (2-S); Three-Shot (3-S) and Cover Shot (CS). Note the sequence of these shots and discuss how the principles of visual composition (balance and depth) apply.

4. Review camera techniques such as zooms, dissolves, cuts, plans, wipes, and keying effects. Refer to *Behind the Camera* by Kuhns and Giarino, and *Actior! Camera: Super Eight Cassette Film Making for Beginners* by Carrier and Carroll.

5. Assign groups of students to select large art reproductions from the classroom file, each with an accompanying narrative description; and make tracings of the compositions. Slides may be projected instead and images traced on a large sheet of paper. (Prints are available from Shorewood Reproductions, Inc., Van Nostrand Reinhold Company, and the National Gallery of Art.) As they read a narrative, students should outline the section being described, using a rectangle corresponding to the television aspect ratio of 3:4. Each shot should be labeled with the desired camera technique and then cut out, numbered, and arranged in sequence, to form a story board.

6. Direct students to use a videotape recorder (or an 8 mm camera) to film the narratives, following the story board outline. Refer to *Introducing the Single Camera VTR System* by Mattingly.

7. Have students design and photograph their title and credit shots.

8. Students should consult one of the music teachers and select appropriate music to be dubbed onto the videotape.

9. Take students to visit a television studio to study techniques of production.

Instructional Materials:

(B) *Action! Camera: Super Eight Cassette Film Making for Beginners* by Carrier and Carroll

(B) *Behind the Camera* by Kuhns and Giarino

(B) *Introducing the Single Camera VTR System* by Mattingly

Assessment Measure:

. Show the films to the class and invite students to critique the productions.

Alternate Activities

When camera or film are not available, the five activities described below may serve to introduce the concept of motion pictures.

Thaumatrope

Make a simple spinning device called a Thaumatrope by drawing an image on one side of a 2" disc, and a complementary picture on the other side. (Example: a bird on one side and a birdcage on the other) Attach two short strings or threads to the sides, and spin the disc.

Revolving Disc

Sequential images can be drawn on a cardboard disc which is then taped or glued onto an old phonograph record. Make a viewer by cutting a slot in a piece of cardboard. Put the disc on a record player, and hold the edge of the record so that it will turn slowly while each image is viewed through the slot. If carefully planned, the subject will seem to move. Stick figures jumping up and down or tossing a football are two easy ideas to start with.

Stroboscope

A stroboscope can be made by drawing sequential images in a circle on a cardboard disc that is slotted around the outer edge. Mount the disc on a wooden ice cream stick with a thumb tack. Hold the stick with the images facing a mirror and spin the disc. If you look through the slots into the mirror, the images will seem to move. Try spinning the disc in the opposite direction, also.

Flip Book

Bind sequential pictures, drawn on fairly stiff paper, into a book. As you flip the pages, the images will seem to move. This can also be effective by using sample paint cards assembled to change hues gradually. For still another project, add designs that grow and burst like fireworks.

U Film

Undeveloped 16 mm film and/or old movie film or discarded filmstrips stripped of emulsion by a in domestic bleach can be used to make animated movies by drawing directly on the film. The images must be simple because of the small size of the film and frames. Framing can be ignored for the animator who wants to use a colored, transparent, felt-tip pen simply to draw non-objective wavy lines and designs along the length of the film. (If a copy of *Hen Hop,* the classic film of this type, is available, the teacher may wish to show it.) The hand-animated film can be made into a loop to run continuously on the projector, thus providing greater enjoyment.

If frames are used, draw lines side-to-side between sprocket holes. Then create a simple sequence of movement using geometric or abstract shapes repeated in each frame. Remember that one second of running time requires 18 frames of action, and a gradual change in the image will produce the best results.

Instructional Objective 7. (Optional) *The student should be able to demonstrate the knowledge and skills necessary to operate and care for a still photograph camera.*

. **Performance Objective 1:**

. Describe and demonstrate the optic principles of camera design.

Suggested Sequence for Instruction:

1. Demonstrate and explain basic photo-optics.
2. Demonstrate the construction and operation of a pinhole camera.
3. Assign the reading of a chapter on photo-optics. (See *The Amateur Photographer's Handbook* by Aaron Sussman, or *Photography* by Barbara and John Upton.)
4. Have students construct a pinhole camera and take photographs.

Instructional Materials:

(B) *The Amateur Photographer's Handbook* by Aaron Sussman

(B) *Photography* by Barbara and John Upton

Assessment Measures:

- The student should show by diagram the path light follows as it enters a camera and produces an image on the film.
- Each student should display photographs produced with a pinhole camera.

Performance Objective 2:

- Demonstrate the use of focal length adjustments on a camera.

Suggested Sequence for Instruction:

1. Assign a chapter on focal length. (See *Photography* by Barbara and John Upton.)
2. Demonstrate the use of *f* stops.
3. Have each student photograph a subject, using various *f* stops.
4. Ask all students to display and compare the printed results.
5. Conduct a discussion of the printed results.

Instructional Material:

(B) *Photography* by Barbara and John Upton

Assessment Measures:

- Each student should draw a diagram showing several aperture sizes and corresponding *f* stop designations.
- Ask each class member to explain orally or in writing how *depth of field* relates to *f* stop.
- Have each student label his/her photographs with *f* stops used and display these photographs.

Performance Objective 3:

- Demonstrate how shutter speed affects the resulting photograph.

Suggested Sequence for Instruction:

1. Using prepared visual aids, discuss the effects of various shutter speeds and *f* stops.

2. Students should be given these assignments:

   a) Read a chapter on shutter speed in *Photography* by Barbara and John Upton or *Photography: A Manual for Shutterbugs* by Eugene Kohn.

   b) Photograph a subject by using various shutter speeds but leaving the *f* stop at the same setting. Compare the printed results.

   c) Adjust cameras to take a picture of a distant object and make an exposure using this setting.

   d) From the original setting, move the *f* stop one setting higher, and position shutter speed one setting lower. Make an exposure using this new setting.

   e) Continue the same procedure, one *f* stop higher, one speed lower, until you can go no farther in either direction.

   f) Label, mount, and display the photographs.

Instructional Materials:

(B) *Photography: A Manual for Shutterbug* by Eugene Kohn

(B) *Photography:* by Barbara and John Upton

Assessment Measures:

- Each student should explain how shutter speed and *f* stop relate.
- Students should compare printed results with those of classmates.
- A chart should be constructed by each student to show the relationship between *f* stop setting and shutter speed.
- Answer questions similar to those on sample test questions (Appendix E).

Instructional Objective 8. (Optional) *The student should be able to demonstrate procedures for processing film and printing black-and-white photographs.*

- **Performance Objective 1:**

  - Demonstrate procedures for mixing and storing photo processing chemicals.

Suggested Sequence for Instruction:

1. Confer with a chemistry teacher on MCPS regulations for mixing and storing chemicals. Post charts and discuss directions on mixing and storing photo chemicals in the classroom and in a personal darkroom. EMPHASIZE SAFETY PRECAUTIONS. (Refer to *MCPS Safety Handbook*, Science section.)

2. Have students mix and store their processing chemicals according to directions.

Instructional Materials:

(M) Kodak instruction sheets for preparation of chemicals

(M) *MCPS Safety Handbook*

Assessment Measure:

- After students have used chemicals to develop and print a roll of film, have them note any effects on their prints attributable to improper mixing. Correct, if possible.

- **Performance Objective 2:**

  - Describe the function and use of photo chemicals.

Suggested Sequence for Instruction:

1. Assign students to read the section on processing chemicals in *Photography* by Barbara and John Upton.
2. Demonstrate the steps in processing film in open trays.
3. Arrange a schedule for students to develop and print a roll of film.

Instructional Materials:

(B) *Kodak Master Darkroom Data Guide*

(B) *Photography* by Barbara and John Upton

Assessment Measures:

- Have each student construct a chart showing the sequence for using photo chemicals.
- Have each student construct a chart showing developing times for different temperatures.

- **Performance Objective 3:**

  - Demonstrate the use of the photo developing tank.

Suggested Sequence for Instruction:

- Demonstrate the procedure for developing film, using the "Yankee" developing tank. (Refer to *The Kodak Master Darkroom Data Guide* and *The Amateur Photographer's Handbook* by Aaron Sussman.) While one-half the class is processing film, have the other half complete a reading assignment on photo composition.

Instructional Materials:

(B) *Kodak Master Darkroom Data Guide*

(B) *The Amateur Photographer's Handbook* by Aaron Sussman

Assessment Measures:

- Ask the appropriate half of the class to demonstrate to the other students the use of the developing tank.

- Have students evaluate developed film to determine whether negatives are of good quality. (Is there any evidence of under- or overdeveloping? Are there scratches or spots on the negative?)

- **Performance Objective 4:**

  - Demonstrate the processes for printing black-and-white photographs.

Suggested Sequence for Instruction:

1. Refer to visual aids and demonstrate the use of the photo-enlarger and the processing chemicals needed to produce a finished photographic print.

2. Post and discuss instructions for washing and drying prints.

3. Have students produce finished photographic prints from their own negatives.

Instructional Material:

(B) *The Complete Art of Printing and Enlarging* by O.R. Croy

Assessment Measures:

- Display all finished work and conduct a class critique.

- Administer a written test on the use of the enlarger. (Refer to Appendix E for sample test questions.)

Instructional Objective 9. ***The student should be able to identify and describe the aesthetic qualities of photographs and photo displays.***

- **Performance Objective 1:**

Develop criteria for the selection and composition of subject matter.

Suggested Sequence for Instruction:

1. After all students read the chapter on photographic composition in *The Complete Art of Printing and Enlarging* by O.R. Croy, discuss reasons some photographs are more interesting or pleasing to view than others.

2. Conduct a class critique of collected photos.

3. Have students analyze their own negatives for such compositional qualities as balance (horizontal and vertical), eye movement within the picture, texture, and balance between dark and light areas. (Refer to *Photo Design* by Harold Mante.)

4. Discuss photo cropping, using a visual aid to add clarity.

5. Have students crop finished photographs in several different ways, then have them compare and choose the ones they feel are done best.

Instructional Materials:

(B) *The Complete Art of Printing and Enlarging* by O.R. Croy

(B) *Life Library of Photography*

(B) *Photo Design* by Harold Mante

(B) *The Photographer's Eye* by John Szarkowski

Assessment Measures:

- Have each student use criteria developed during the unit to assemble a one-person show of what each considers his/her best work.

- Allow each student to choose a photograph by a recognized master photographer like Steiglitz, Steichen, Adams, or Ulsman for written analysis of its composition and why it is good.

- **Performance Objective 2:**

  - Identify aesthetically pleasing forms and compositions in photographs.

Suggested Sequence for Instruction:

1. Show selections from the filmstrip cassette series *Images of Man,* and discuss the techniques used by several famous artist-photographers.

2. Have each student select any commonplace item like an old shoe, a tricycle, or a junk car, and photograph it from different angles and with varying backgrounds.

3. Display these photographs, and conduct a class critique.

4. Formulate criteria for recognizing an aesthetically pleasing photographic subject.

Instructional Materials:

(M) *Images of Man*

(B) *Life Library of Photography*

(B) *Private Realities: Recent American Photography* by Clifford S. Ackley

Assessment Measure:

Refer to photographs, and ask students to explain how a commonplace item can be made to appear aesthetically pleasing in a photograph, listing criteria for aesthetic preferences.

Instructional Objective 10. *The student should be able to prepare photographs and art work for display or presentation.*

- **Performance Objective 1:**

  - Demonstrate dry-mounting processes.

Suggested Sequence for Instruction:

- Post charts and distribute handouts describing dry-mounting procedures.
- Demonstrate proper procedures for dry mounting a photograph.
- Have students use the tacking iron and dry mount press to mount their photographs.

Instructional Materials:

- Dry mount press directions
- Dry mount tissue instructions

Assessment Measures:

- Each student should describe in writing the procedures for dry mounting photos.
- Students should critique their own prints as to whether the mounted photographs are wrinkle-free and evenly mounted.

Performance Objective 2:

- Demonstrate matting techniques.

Suggested Sequence for Instruction:

1. Display examples of various matting techniques for photographs and art work. Discuss the effectiveness of various arrangement techniques such as *centered, flush, horizontal, vertical,* and *off-center.*
2. Instruct students to mount their photographs or art work in the most effective manner, considering the composition and the type of display.

Instructional Materials:

(B) *Library of Photography* by Life-Time Publishing Co.

(B) *Photo Design* by Harold Mante

Assessment Measures:

- Each student should assemble and display work in a one-person show.
- Have students produce mats. Compare these, and indicate a general quality for each student's work.

Product Design

A. PACKAGE DESIGN

Instructional Objective 11. ***The student should be able to describe and demonstrate the design process as applied to packaging.***

. **Performance Objective 1:**

. Analyze examples of product design, using criteria related to function, aesthetics, and human needs.

Suggested Sequence for Instruction:

1. Review the principles of design as they pertain to manufactured or handcrafted forms. (Refer to *Design Through Discovery* by Bevlin and several issues of *Packaging Design* and *Industrial Design* magazines.)
2. Display and discuss selected examples of objects in which the elements and principles are applied to suit a specific purpose or function.
3. Students should be encouraged to develop a picture file in which similar objects are rank ordered in terms of function, aesthetics, and human needs.

Instructional Materials:

(B) *Design Through Discovery* by Marjorie Bevlin

(P) *Industrial Design*

(M) Merchandise catalogs such as Sears or Wards

(P) *Packaging Design*

Assessment Measures:

1. Shown an assortment of handcrafted objects and other designs, the student should describe the elements and principles of design emphasized in each.
2. Most students should be able to compare and evaluate the design in a series of related handcrafted objects such as an automobile model series.
3. Ask students to determine the design compatibility of related objects (toasters, blenders, or a teapot, creamer, and sugar bowl) by matching two sets of pictures.

. **Performance Objective 2:**

. Research, design, and construct a prototype of a package or container.

Suggested Sequence for Instruction:

1. Collect a variety of product containers and packages along with promotional material related to them. Cosmetic products provide excellent examples of packaging.

2. Group these items according to whether the product is (a) a basic need for good living, (b) an impulse sales item, or (c) a luxury item. Discuss these categories and develop a list of characteristics describing each group.

3. Using the collected samples and prepared visuals, discuss package design in terms of (a) elements of design; (b) fabrication materials; (c) printing considerations and constraints; and (d) fabrication considerations and constraints. *Packaging Design* magazine is a good reference which occasionally includes sample materials and packages. Refer also to *Five More Eggs: Traditional Japanese Packaging* by Hideyuki Oka.

4. Discuss market research in terms of:

   - defining the market toward which advertising is directed or in which a product will be sold
   - defining the needs and desires of consumers as well as their buying habits
   - pinpointing specific product advantages which can then be extolled in advertising
   - measuring the hard image and indicating the need for change or strengthening of that image

5. Ask students to identify several products for packaging in single or in multiple units. Limit the number of products identified so that each one is selected by at least three students.

6. Have students design a questionnaire for use in researching the market for their products. (See Appendix C for sample.)

7. Ask the students to work in teams to survey students in the school during lunch, and before or after school.

8. Survey information should be tabulated and the basic criteria for an acceptable product design formulated.

9. Students should prepare thumbnail sketches as ideas for their package design, critique them individually, and select the best idea for development.

10. Display completed packages in groups according to the product selected.

11. Conduct a group critique of all packages on the basis of graphic design, form, typography, selection of material, and craftsmanship.

Instructional Materials:

(P) *Industrial Design*

(P) *Packaging Design*

(B) *Packaging: The Contemporary Media* by Robert Neubauer

(B) *Five More Eggs: Traditional Japanese Packaging* by Hideyuki Oka

(B) *Trademarks* by Peter Wildbur

Assessment Measure:

- Each student should decide which package is the best in each group and state reasons for the selections.

Environmental Design

A. ARCHITECTURE — RESIDENTIAL

Instructional Objective 12. *The student should be able to demonstrate a knowledge of the social, technological, and ecological systems that affect the built environment.*

. **Performance Objective:**

. Analyze personal preferences for residential design and develop an interpretive model.

Suggested Sequence for Instruction:

1. Discuss the physical, social, and aesthetic needs of people.
2. Develop a list of functions that a house should serve.
3. Discuss traffic patterns and storage and utility needs.
4. Consider the need to use sunlight and shade to conserve energy for heating and cooling.
5. Review standard symbols used by architects to represent structural features. (Refer to *Architecture and Interior Environment* by Forrest Wilson, and obtain other resource materials from the Industrial Arts and Home Economics staff.)
6. Prepare a class list of the characteristics essential or desirable to incorporate in a planned dream house; and develop a bubble diagram showing various home functions and their relationships to each other, to the sun, and to the site.
7. A checklist should be developed by the class for the planned house to include:
   - General location and size of lot
   - Style of architecture
   - Number of rooms and other spaces like garages
   - Types of materials preferred (exterior and interior)
   - Landscaping

Instructional Materials:

(B) *Architecture and Interior Environments* by Forrest Wilson

(B) *Architecture: A Book of Projects for Young Adults* by Forrest Wilson

(B) *Architecture: Residential Drawing and Design* by Clois Kicklighter

(B) "The Master Builders," *Art and Man*, Vol. 7, No. 1

(B) *Designing Houses: An Illustrated Guide* by Walker and Milstein

Assessment Measures:

- Having listed his/her own priorities, each student should design and draw to scale the floor plan for a "dream house," using standard architectural markings. (To provide for individual differences, the instruction may allow students to plan the interior of a mobil home, a van, or a trailer; or the assignment may be for the layout and the furnishing of a single room, making color charts and adding swatches of fabrics to be used.)

- How effectively has the student reflected his/her own stated needs and interests in the dream house design?

- Are the architectural markings used correctly?

- Are measurements scaled accurately?

B. ARCHITECTURE — MODULAR DESIGN

Instructional Objective 12. *The student will demonstrate a knowledge of some of the social, technological, and ecological systems that affect the built environment.*

- **Performance Objectives:**

1. Recognize module-based components in architectual design.

2. Design a multi-unit structure using module-based components.

Suggested Sequence for Instruction:

- Bronowski states in the *Ascent of Man* that the key to man's construction of complex architecture lay in his ability to combine building components, rather than relying on a single material in its natural state, such as a tree for a beam or a single stone for a pillar.

- Space inside ancient Greek temples was congested with columns which were needed to support the relatively short lengths of stone beams that could safely span them. The Romans increased the span between columns by using an arch to bridge their crowns. Renaissance builders designed a higher and lighter space by using a pointed arch in combination with the flying buttress.

- Contemporary structures provide a variety of spaces through the use of engineered beams or trusses and lightweight materials. Inflatable structures and geodesic domes provide even greater potential for enlarging spaces. Smaller room size spaces are prefabricated in factories or on the ground and then placed into any desired arrangement. Moshe Saftie designed concrete and fiberglass room modules in this way for the Montreal World's Fair. Where ancient tribes constructed module-type pueblos of adobe in Canyon de Chelly in Arizona, Paolo Soleri has started construction of a vertical city. Another type of design, using the geodesic dome, was invented by Buckminster Fuller. He predicts that huge ones may someday cover entire cities. Scientists now working in Antarctica are living under such structures. These dome modules consist of glass or other material in triangular frames which are locked together.

- Study a planned community like Reston in Virginia or Columbia and Montgomery Village in Maryland for examples of modular urban planning where several basic house forms are repeated.

Instructional Materials:

(B) *Defensible Space: Crime Prevention Through Urban Design* by Oscar Newman

(B) "The Master Builders," *Art and Man,* Vol. 7, No. 1

(B) *Module, Proportion, Symmetry, Rhythm* by Gyorgy Kepes

(B) *Visionary Cities: The Arcology of Paolo Soleri* by D. Wolk.

Assessment Measures:

- Students design a structure using components of two or more different modules; they then produce a model for efficient, multi-unit housing of the future. Modules may be found objects such as containers, junk parts, or other forms available in quantity.

- The models may be compared in terms of aesthetic value, structure feasibility, and social impact. The question of whether many people can afford detached single-unit dwellings should be considered; and these multi-unit types of housing should be suggested as a possible solution to high costs.

- As an optional project, students may plan an entire community using modular units and combinations of units to represent various structures.

- Discuss the social implications of multi-unit housing on a large scale.

C. ARCHITECTURE AND CLIMATE

Instructional Objective 13. *The student should be able to recognize the importance of the environment as a factor in architectural design and the importance of architectural design as a factor in preserving the environment.*

- **Performance Objective:**

  - Identify several structural techniques which will accommodate excessive sun, wind, or rain.

Suggested Sequence for Instruction:

- By trial and error through the ages, man has designed and built structures from available materials in a way to withstand prevailing elements. Ingenuity in devising weatherproof structures from common materials has been an important key to man's survival. Builders have always known that the durability of their structures was, in part, dependent on the environment. It is important also to understand that the survival of an environment depends on whether buildings are designed to oppose nature or to function as extensions of it.

- Today, primitive societies in rain forests, as well as condominium owners along seashores, have learned to build on stilts or pilings in order to withstand the drenchings of rain and poundings of ocean waves.

- Noah's Ark is an example of a structure being designed to work with forces of nature. The ark survived its tests by the elements, but many large structures in recent times have not done so well. One of the better known examples is that of the Imperial Hotel in Tokyo, designed by Frank Lloyd Wright; that hotel collapsed during an earthquake. Architects now design floating structures which are cushioned from the shock of earthquakes.

- The Eskimos provide lessons in design adaptation. Their snow-block igloos are preshaped to minimize the effects of arctic winds; tunnel entrances are lower than inside living areas, causing cold air to drop below the floor level.

- The people of the desert in ancient times learned to live in their environment. In the Sahara today, houses may be buried under thirty inches of earth, using its insulating qualities for protection from severe heat of day and cold of night.

- In America, New England farmhouses have additions that connect the house and barn so that the farmer can tend animals without the need to move banks of drifted snow. Old Louisiana homes have large porches and raised ground floors to take full advantage of cooling breezes in the warm, humid climate. The Indian teepee is ideally constructed of readily available animal hides over long poles which extend out the top. Ventilation is controlled by adjusting flaps at the top and over the entrance.

- In Normandy, France, where winds are very strong, many houses have rounded, thatched roofs facing into the wind; while on the leeward side, the roof opens into a conventional, peaked overhang. In Provence, the northern facades of many buildings have only one story, with few windows, as protection against the wind; while southern facades usually have two stories with shuttered windows and porches.

2. All buildings are solar collectors. Architects and builders must learn to utilize better the oldest and often the most efficient collectors, windows and skylights. In the long run, there is no choice but to live with nature; and with a growing shortage of fossil fuels, living spaces can no longer be designed to use only artificial means for heating and cooling.

3. Read the chapter "Climate-Control Earth Capsules" in *Architecture and Interior Environment* by Forrest Wilson. Discuss some of the ways builders have solved problems related to climate. Refer also to any book on solar heating. Discuss the need for awnings, vestibules, porches, etc. Obtain information from geography and science teachers about climate in various countries and on other planets and review this information with students. Discuss winds, heat, radiation, etc. Discuss the possible environmental requirements of man living on another planet. Compare these with requirements of a pet hamster, dog, or horse.

4. Compare the plans of a house heated only by fireplaces with those of one using central forced air or one using electrical heat. How does each affect the design of a house? Point out that technology has made it possible to build similar structures in very different climates through the use of air conditioning, heating systems, wall insulation, insulated glass windows, etc.

5. Show pictures and plans of Terraset, the underground solar-heated elementary school in Fairfax, Virginia.

6. Use a series of pictures from *National Geographic* magazines to show houses and shelters from a variety of countries and historic periods. Ask the class to infer what kind of environment and climate each is and state reasons for the inferences.

Instructional Materials:

(B) *Barns, Sheds and Outbuildings,* Byron Halsted (ed.)

(B) *Our Man-Made Environment, Book Seven,* by Alan Levy, William Chapman, and Richard Wurman

(B) *Architecture and Interior Environment,* by Forrest Wilson

D. RECREATIONAL ENVIRONMENTS — AMUSEMENT PARKS

Instructional Objective 13. *The student should be able to recognize the importance of the environment as a factor in architectural design and the importance of architectural design as a factor in preserving the environment.*

. **Performance Objective:**

. Plan an amusement park for general public use where facilities are integrated with natural elements.

Suggested Sequence for Instruction:

1. Carnivals, fairs, and amusement parks are special environments that are planned for entertainment and relaxation. The activities provided are often informative as well as entertaining, especially at trade fairs and world fairs. Amusement parks are becoming more informative as they are designed around a central theme. Parks like Busch Gardens and Disney World emphasize one or more themes related to various world cultures, the past, or the future. The theme park is an excellent site for studying a variety of built environments.

   Consider amusement parks as being a balanced arrangement of environments for movement and rest, comfort and excitement, eating and conversation. Relate these elements to the various types of structures and spaces generally provided in an amusement park.

2. Refer to the article "Travel Guide to Theme Parks" and collect descriptive literature on amusement parks like Disney Land, Sea World, and Hershey Park. With the class, develop a chart that shows various kinds of amusement park structures, facilities, and spaces. (Include the rides, food concessions, games, comfort stations, transportation facilities, gardens, and picnic areas.)

3. Develop a set of graphic symbols that would be used by all students in planning their designs. Identify and display the markings used by architects and landscape designers to show trees, shrubs, walks, and streams. Review the concept of working "to scale."

4. Provide a map of a large irregular tract of land, indicating the location of forested areas, streams, hills, and roads. Using this site, students design a layout for an amusement park with graphic symbols identifying the various structures. Students may, instead, build a topological model and locate clay or cardboard structures according to a plan. (Refer to *Anatomy of a Park* by Rutledge for sample park plans and symbols.)

Instructional Materials:

(B) *Anatomy of a Park* by Albert Rutledge

(B) *Design with Nature* by Ian L. McHarg

(P) "Travel Guide to Theme Parks," from *The Instructor* by David Christopher

Assessment Measures:

Students will assess their own designs using the following criteria:

- Natural elements are a part of the plan.
- Parking areas, walks, and food and rest facilities are included.
- Structures are grouped or scattered according to their function and need.
- All elements are shown to scale.

COMMERCIAL ART II

GENERAL COURSE OUTLINE AND UNIT OBJECTIVES

The following units are prescribed for Commercial Art II. However, the sequence and length of units may be altered to suit local program needs and adjusted to the limits imposed by the available facilities. Performance objectives are intended to illustrate the manner in which instructional objectives may be achieved. Instructional objectives and performance objectives are listed in the order in which they appear in this instructional guide.

UNIT I. VISUAL COMMUNICATIONS

A. GRAPHIC DESIGN

Instructional Objective 1. *The student should be able to demonstrate production processes related to graphic arts such as type specification, paste-up, copy camera operation, and negative stripping.*

Performance Objectives:

1. Identify several type styles and demonstrate type measurement.
2. Identify the terms and symbols commonly used in writing copy or type specifications.
3. Using a prepared layout, use accepted studio procedures to produce a camera-ready paste-up complete with printing directions.
4. Demonstrate the operating procedures for the copy camera.
5. Demonstrate procedures for negative stripping.

B. DISPLAYS AND SIGNAGE

Instructional Objective 2. *The student should be able to apply graphic- and display-art techniques to the production of a display.*

Performance Objectives:

1. Design and construct a display for the promotion of a product or service.

C. ILLUSTRATION

Instructional Objective 3. *The student should be able to create commercial illustration for several types of printed materials.*

Performance Objectives:

1. Produce four illustrations based on a selected photograph, each one using color in a different medium.
2. Design a layout for a fashion advertisement, emphasizing ambiguous forms.

3. Illustrate a poem, essay, or technical/scientific concept.

4. Produce a 16-page picture storybook in color, including prematerial such as title page.

D. MEDIA/PHOTOGRAPHY

Instructional Objective 4. (Optional) *The student should be able to demonstrate a knowledge of several basic filmmaking processes, including animation.*

. **Performance Objectives:**

1. Demonstrate *pushing, burning,* and *dodging* techniques for photo processing and printing.

2. Distinguish between various types and weights of photographic papers and choose the best one for a particular application.

3. Demonstrate the use of polycontrast filters and papers.

4. Demonstrate some of the techniques of film animation.

Instructional Objective 5. *The student should be able to identify and analyze the compositional and expressive qualities of photographic prints.*

. **Performance Objective:**

. Produce photographs which demonstrate a variety of compositional and expressive qualities.

UNIT II. PRODUCT DESIGN

A. INDUSTRIAL DESIGN

Instructional Objective 6. *The student should be able to apply an understanding of the design process to an environmental and industrial design problem.*

. **Performance Objectives:**

1. Identify criteria for the development of a design and for the control of a design solution.

2. Design and develop a rendering or prototype of a product.

3. Identify the design characteristics of an interior or an industrial design product.

4. Describe the steps necessary for developing a functional design.

B. (*To be developed*)

UNIT III. ENVIRONMENTAL DESIGN

A. INTERIOR DESIGN

Instructional Objective 7. *The student should be able to conceptualize some relationships between various components of a built environment.*

. **Performance Objective:**

. Explore the structure and organization of the theatre by participating in a stage production.

B. URBAN PLANNING — CITIES OF THE FUTURE

Instructional Objective 7. ***The student should be able to conceptualize some relationships between various components of a built environment.***

. **Performance Objectives:**

1. Identify the major structural components of a community and incorporate them in a design for a city.

2. Formulate a solution to several community planning problems of the future based on a consensus of student opinions.

UNIT IV. CULMINATING ACTIVITY

Instructional Objective 8. ***The student should be able to demonstrate knowledge of visual communication, product design, or environmental design through a practical production effort.***

. **Performance Objective:**

. Plan, organize, and develop a complete production, either individually or as a member of a group.

Visual Communications

A. GRAPHIC DESIGN

Instructional Objective 1. ***The student should be able to demonstrate production processes related to graphic arts such as type specification, paste-up, copy camera operation, and negative stripping.***

. **Performance Objective 1:**

. Identify several type styles and demonstrate type measurement.

Suggested Sequence for Instruction:

1. Using handouts and a demonstration, introduce the method of type measurement and review the basic type styles. (Refer to *Advertising Graphics* by H. William Bockus and *Graphics Master* by Dean Lem.)
2. Take a field trip to a local printing house that uses a variety of type styles.
3. Point out the type styles in use in most school print shops.
4. Discuss the creation of type faces and refer to type designers like Caslon and Bodoni. Have students make tracings of several type styles.
5. Using a line gauge, measure the type found in magazines and other printed materials.
6. Have students make a collection of printed type faces and include an example of each of the common styles from 6 to 72 picas.

Instructional Materials:

(B) *Advertising Graphics* by H. William Bockus

(B) *Graphics Master* by Dean Lem

Assessment Measures:

. Students should be given a test on basic type styles.

. Students should be given a test on the use of the line gauge.

. **Performance Objective 2:**

. Identify the terms and symbols commonly used in writing copy or type specifications.

Suggested Sequence for Instruction:

1. Prepare handouts and discuss terms and symbols used to correct copy.
2. Clarify definitions by referring to examples.

3. Distribute a page of typewritten copy, double-spaced, with specifications indicated in writing. Distribute another page, the galley proof, with a number of common errors included in the copy but unedited and unmarked. The student, using proofreader's symbols, should correct the proof.

Instructional Material:

(B) *Advertising Graphics* by H. William Bockus

Assessment Measure:

- Each student should check his/her corrected proof against a master galley proof.

- **Performance Objective 3:**

  - Using a prepared layout, use accepted studio procedures to produce a camera-ready paste-up complete with printing directions.

Suggested Sequence for Instruction:

1. Review studio procedures for the production of a paste-up with color overlays. (Refer to *Advertising Graphics* by H. William Bockus, pp. 141-150.)

2. Display examples and give directions for each stage of development.

3. Each student develops or selects a layout and produces a mechanical which includes borders, trimmed reproductions, heading and body copy reproduction, photo position, black artwork, trademark, trim, and registration marks. In addition, the paste-up should have a silhouette halftone or dropout overlay and a color overlay with registration marks. Include all notations such as reductions, screen percentages, reversals, and key lines.

Instructional Material:

(B) *Advertising Graphics* by H. William Bockus

Assessment Measures:

- Have students display finished work and participate in a class critique using the following criteria:

  a) elements appropriate to the product ad theme

  b) effectiveness of ad

  c) principles of design — unity, balance, movement, emphasis, accuracy, neatness of preparation and presentation

- Students should demonstrate an understanding of vocabulary by using relevant terms in discussions and critique.

- **Performance Objective 4:**

  - Demonstrate the operating procedures for the copy camera.

Suggested Sequence for Instruction:

1. Prepare a list of vocabulary terms and review these with students. (Refer to *Advertising Graphics* by Bockus or *Graphics Master* by Lem.)

2. Distribute diagrams of your copy camera with explanations of each major part. Discuss operating theory.

3. Demonstrate how the copy camera works by photographing a piece of artwork.

4. Review each step in the copying process as listed on handouts.

5. Review procedures for developing exposed film. Post directions and examples.

6. Students are given the opportunity to use the camera to photograph their camera-ready work from the previous project.

7. Students develop their film.

(If a camera is not available for student use, a good understanding of the process can be gained by studying pp. 155-164 in *Advertising Graphics* by H. William Bockus.)

Instructional Materials:

(B) *Advertising Graphics* by H. William Bockus

(B) *Graphics Master* by Dean Lem

Assessment Measures:

. Give a written test on the operation of the copy camera.

. Have students display finished negatives and comment on exposure, focus, and developing characteristics.

. **Performance Objective 5:**

. Demonstrate procedures for negative stripping.

Suggested Sequence for Instruction:

1. Demonstrate and discuss negative stripping techniques.

2. Display examples of negative stripping.

3. Have each student strip his/her own negatives using a paste-up produced earlier.

Instructional Material:

(B) *Advertising Graphics* by H. William Bockus

Assessment Measures:

- Students should display their work and participate in a class critique with these criteria in mind:

  a) accuracy (all registration marks matching)

  b) neatness (lack of visible pin holes or scratches on the negative)

- Students should make or "burn" offset plates from stripped negatives. (Since directions for making plates vary from brand to brand, follow instructions.)

B. DISPLAYS AND SIGNAGE

Instructional Objective 2. ***The student should be able to apply graphic- and display-art techniques to the production of a display.***

- **Performance Objective:**

  - Design and construct a display for the promotion of a product or service.

Suggested Sequence for Instruction:

1. Exhibit photographs or project slides of display units showing a variety of styles and techniques.

2. Discuss current trends in merchandise display by categorizing several ways to exhibit, such as a window display, a portable item or point-of-purchase display, and a wall-in display (like a room). Other categories may relate to instruction or descriptions of products and services; a tableau or feature display which resembles a stage; a self-service display unit; and promotional displays.

3. Show examples of actual displays designed for point-of-purchase use. Make slide copies of examples shown in a trade magazine, and obtain scrapped displays from stores and showrooms.

4. Discuss recent trends in point-of-purchase display techniques. Designers are making more use of humor, and they are paying greater attention to structure in that displays must be portable, be shipped knocked down, and be assembled easily in the store. The shape of this type of display is also important, as it "communicates" to a consumer.

5. Discuss displays that move. Point out common ways that animation is used as an attention creating device while serving a functional part of displays. For example, a hand may be mechanized to remove the lid from a container. These techniques of motion introduce an element of showmanship to a display. Although often dramatically arranged, window displays are not so elaborate today as they once were.

6. Using an assortment of small, empty boxes painted white and pieces of mat board, have students assemble a mock-up of a display unit suited to a selected product. Review techniques for cutting, scoring, and folding a display aboard. Suggest ways for translating the mock-up into a completely prefabricated display.

7. Review techniques for adding color and typography. These techniques may include air brush, pressed type, screen printing, and relief design.

8. Have each student design and construct a display unit for a product of his/her choice.

Assessment Measure:

- Each student should compare his/her design solution with those of other students, rating designs on the basis of (1) how effectively a display is related to the product shape, color, typography, and use, and (2) how well constructed and finished it is.

Instructional Materials:

(M) Creating Displays

(M) Ideas for Displays

(M) Planning Displays

(M) Unit Display

C. ILLUSTRATION

Instructional Objective 3. ***The student should be able to create commercial illustrations for several types of printed materials.***

- **Performance Objective 1:**

  - Produce four illustrations based on a selected photograph, each one using color in a different medium.

Suggested Sequence for Instruction:

1. Review and discuss the characteristic quality of a variety of color media.
2. Display examples of illustration in a variety of media.
3. Have each student use designer colors, tempera, felt-tip pens, and inks to produce each of the four illustrations (a different medium for each one.).
4. Have students mat their four illustrations; use tracing paper overlay and cover sheet.

Instructional Material:

(P) *Illustrations 17* (current edition)

Assessment Measures:

- Have students display work and participate in a class critique.
- Ask students to interpret the various moods created by the different media.
- Direct students to pick their own favorite illustrations to include in their portfolios.

- **Performance Objective 2:**

  - Design a layout for a fashion advertisement, emphasizing ambiguous forms.

Suggested Sequence for Instruction:

Movies today often start with the titles and credits against a background of ambiguous shapes, values, or colors that gradually or abruptly change into more readable or realistic forms. The public's viewing habits have been conditioned to this "music of form" by years of flat-shape, animated cartoons with accompanying distortion and abrupt scene changes. Many advertisements and divider pages in brochures are also using a similar double-take approach. Abstraction and non-objective art are becoming a real part of our communications system; and art students should be sensitive to it, understanding its use.

1. From a fashion magazine select a single fashion figure in an interesting pose. Place a sheet of tracing vellum over it and make a line drawing from the photo. Now cut out two large composing L's or a viewing frame so that the negative and positive spaces fight for maximum attention. Draw the border around the selected composition by running a pencil around the inside edge of the L's. Transfer this ambiguous composition to bond paper.

2. Add two or three type letters or a single word to the layout, but *relate* them to the figure and keep them ambiguous also. One possibility is to darken half the letter face.

3. Lay another sheet of tracing paper over the bond layout; and with your pencils, start laying in solids — blacks and fifty percent flat grays. In the line drawing, a spatial arrangement was used to make the ad somewhat ambiguous. Now use the pattern of three values (black, gray, and white) to make the ad even more ambiguous. Perhaps an arm could be black from shoulder to elbow and gray from elbow to finger tips. Perhaps one side of the face or garment could be the same value as that of the adjacent background. Feel your way through the ad by relating and spacing the three definite values throughout the composition. The type can be treated in the same fashion. It is not necessary to black-in every letter.

4. When you are satisfied that you have an ambiguous feeling (similar to a double-take) and that it required more than a passing glance to understand the figure, check this tissue value study with the teacher. Next lay in the values on the bond and complete the layout by adding a narrow black border. (While you work, keep a piece of clean paper under the heel of your hand to prevent smearing.)

Assessment Measure:

- Display all finished layouts, and have students discuss the ambiguous elements of each design with the class.

Performance Objective 3:

- Illustrate a poem, essay, or technical/scientific concept.

Suggested Sequence for Instructions:

1. Display and discuss examples of story or book illustrations. Compare and contrast illustrations from children's books, dictionaries, and scientific and technical publications.

2. Discuss some of the techniques required. Refer to visual aids.

3. Create a series of thumbnail sketches and develop full illustrations of the ones that best convey a story.

Instructional Materials:

(P) *Art Direction Magazine*

(B) *Graphics Annual* (current edition)

Assessment Measures:

- Have students mat and display finished work and participate in a class critique.
- Ask students to submit work for inclusion in the school literary magazine.
- Have students place their work in portfolios.

- **Performance Objective 4:**

  - Produce a 16-page picture storybook in color, including prematerial such as title page.

Suggested Sequence for Instruction:

1. Read *Making Picture-Books* by Stephen F. Gordon.
2. Display examples of sequential illustrations used in picture books and discuss styles and techniques in relation to the total design of the book.
3. Discuss the possible metamorphosis of one shape or idea into another.
4. Produce thumbnail sketches of ideas. Display these ideas; and with the help of classmates, choose the best one to develop into a sequence of pictures to tell a story.
5. Using pen and colored ink, produce a series of drawings suitable for printing.

Instructional Material:

(B) *Making Picture-Books* by Stephen F. Gordon

Assessment Measures:

- Students should display finished work.
- Selected student work should be critiqued by students.

D. MEDIA/PHOTOGRAPHY

Instructional Objective 4. (Optional) *The student should be able to demonstrate a knowledge of several basic filmmaking processes, including animation.*

- **Performance Objective 1:**

  - Demonstrate *pushing, burning,* and *dodging* techniques for photo processing and printing.

Suggested Sequence for Instruction:

1. Review film processing techniques.
2. Explain the procedure for *"pushing"* negatives.
3. Demonstrate the technique of *"burning"* and *"dodging"* and show examples of each.
4. Assign readings on these photographic techniques in books like *The Complete Art of Printing and Enlarging* by O.R. Croy and *The Amateur Photographer's Handbook* by Aaron Sussman.
5. Students demonstrate knowledge of *pushing, burning,* and *dodging* techniques by producing photographs in which they are used.

Assessment Measures:

- Students display negatives that were *pushed* and post all relative data.
- Students display their photos that were *dodged* and *burned* and explain the technique.

Instructional Materials:

(B) *The Complete Art of Printing and Enlarging* by O.R. Croy

(B) *The Amateur Photographer's Handbook* by Aaron Sussman

- **Performance Objective 2:**

  - Distinguish between various types and weights of photographic papers and choose the best one for a particular application.

Suggested Sequence for Instruction:

1. Display labeled photos printed on several different types of surfaces.
2. Discuss with students the differing qualities and possible applications of each weight paper.
3. Print the same photograph on a variety of papers. Mount each one and label as to type and exposure data.
4. Print a portrait on a textured portrait paper and on a sheet of high contrast paper. Compare the results.

Instructional Materials:

(B) *Amphoto Black and White Film Data Book*

(B) *Kodak Master Photo Guide*

(B) *Master Darkroom Data Guide*

Assessment Measure:

- Students should identify the best paper for (1) a soft-textured portrait; (2) a stark, very graphic image; (3) a very precise multi-contrast object; and (4) clouds.

- **Performance Objective 3:**

  - Demonstrate the use of polycontrast filters and papers.

Suggested Sequence for Instruction:

1. Demonstrate the use of polycontrast filters to control value and contrast.

2. Display and compare examples of photos made using polycontrast filters and some photos not using filters.

3. Students will produce a series of photographs using the same negative but with a different polycontrast filter for each. Label each one as to time exposed and filter used. Use a "thin" negative and poly-contrast papers and filters to produce a crisp, sharp print.

Instructional Material:

(M) Kodak Poly-Contrast Filter Instructions

Assessment Measures:

- Students should write a brief explanation of the polycontrast system.

- Have students state to what extent they were able to produce a crisp, sharp print from a "thin" negative. Ask each to submit an example for a class critique.

- **Performance Objective 4:**

  - Demonstrate some of the techniques of film animation.

Suggested Sequence for Instruction:

1. View MCPS films like *Toys, The Refiner's Fire,* and *Clay* for an introduction to animation techniques. Discuss and categorize various animation methods such as cutouts flip cards, drawing directly on film (black or clear leader), clay, toys, and pixilation.

2. Read discussion of film animation in any approved book or periodical.

3. Demonstrate the use of animation in titling. Compare the techniques of pixilation (filming a live actor, as if he were animated, with single-frame shots) with the use of animated puppets or clay figures.

4. A class discussion comparing *live* with animated films should emphasize what each type can and cannot do. When should animation be used? Why? A comparison of reruns of the old *Star Trek* (live action) to the new one (animated) may be useful.

5. The entire class can participate in producing a single animated film. First, define and discuss the concept of metamorphosis. Plan an animated film that portrays the letters of the alphabet, each

evolving from the previous letter and developing into the next. Letters may appear in alphabetical sequence or may be arranged to form words. Each student will work in a standard format, drawing and coloring a letter in his/her own design. In a series of 20 drawings or cells, that letter is slightly altered each time it is drawn until it eventually becomes the next letter. Students will coordinate letter size and color.

6. A silent film is produced by exposing five or six frames of 8mm film for each drawing, using a logical sequence of exposures.

7. To create a synchronized sound film, first select a simple rhythmic instrumental piece of music. Determine the length of time between rhythm beats and integrate this with the standard exposure rate of 18 or 24 frames per second.

8. If a camera is not available, an alternate approach to this problem would include the use of film leader, black or clear, with the letters scratched or drawn with felt pens.

Instructional Materials:

(F) *Frame by Frame: The Art of Animation* — MCPS F6364

Refer to the Resource Section for a Complete List of MCPS Animated Films.

(P) "Dialogue with a Plasticine Sculptimator," George Hood, *American Cinematographer,* April 1978, pp. 394-395.

(M) *Media Center Activities,* MCPS Media Field Services, May/June 1978.

(P) "Super 8: The ABC's of Animation," Gunther Hods and Mark Mikolas, *Audio-Visual Communications,* Jan. 1978, pp. 34-42.

(P) "Twenty Nights in Clay," Doug Fellman, *American Cinematographer,* April 1978, pp. 392-393.

Assessment Measure:

- After students view the film several times, have each one identify the letter or letters most creatively developed.

Instructional Objective 5. *The student should be able to identify and analyze the compositional and expressive qualities of photographic prints.*

- **Performance Objective:**

  - Produce photographs which demonstrate a variety of compositional and expressive qualities.

Suggested Sequence for Instruction:

1. Display photographs by former students which exhibit a wide variety of compositional and expressive quality.

2. Engage the class in a critical discussion of these photos. Which ones have the most visual and emotional impact? How did the photographer achieve the mood desired? Note how subjects are positioned and emphasized within the total composition. (Each student should use an evaluation form as shown in Appendix D to rate each photo.)

3. Each student should produce a photographic study depicting the moods and feelings of a person they know well (20 to 25 photos), being conscious that lighting and positioning of the subject create these effects.

4. In a professional manner, students should display their work as one-person shows.

Instructional Materials:

(B) *Creative Photography* by O.R. Croy

(B) *Photo Design* by Harold Mante

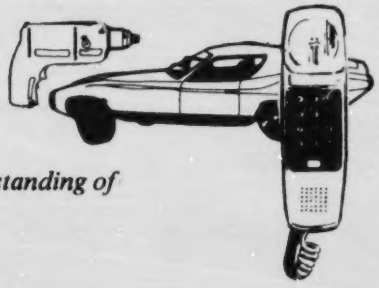
(B) *Photography in America* by Robert Doty

Assessment Measures:

. Select a group of photographs and ask students to identify the ones that depict certain emotions or feelings.

. Students should either submit photos to a critique by class members or write a self-evaluation.

Product Design



A. INDUSTRIAL DESIGN

Instructional Objective 6. *The student should be able to apply an understanding of the design process to an environmental and industrial design problem.*

. **Performance Objective 1:**

. Identify criteria for the development of a design and for the control of a design solution.

. **Performance Objective 2:**

. Design and develop a rendering or prototype of a product.

Suggested Sequence for Instruction:

1. Discuss the following reasons for designing a product, and cite examples:

   . Competition: Monopolies and chain stores offer house brands.

   . Distribution systems: Catalog stores have lower operating costs.

   . Diversification: Conglomerates can supply their own needs.

   . Market developments: Home and export — space shuttle age is beginning.

   . Social changes: Senior Citizen population is increasing in U.S.

   . Invention: Wafer-thin transistors make pocket calculators possible.

   . Variety reduction: Convertible autos are being phased out of production.

   (The first four reasons are likely to be motivated by sales; the remainder by research and mechanical changes.)

2. Identify products which will fit into any four of the categories listed.

   (Refer to current issues of *Industrial Design* and *Packaging Design.*)

3. The teacher selects one criterion for design as the focus for a class problem and identifies a product that would fit this category.

   Example: The pocket calculator, a result of space-age invention, has recently become a highly competitive product on the market. By analyzing the characteristics of a variety of instruments and after conducting a market survey of consumer needs, suggest a way in which a particular model could be redesigned to be more competitive.

4. Discuss the following factors and their influence on design solutions:

   human needs and functions

   product functions

   aesthetics

   materials

   forming processes

   packaging and display

   production time

   promotion

   costs

5. Review processes and techniques for rendering (water color, chalk, ink) and model building (clay, plaster, wood).

6. Ask students to develop thumbnail sketches of several ideas, then produce either a rendering or prototype of their design solution.

7. Read chapters in the design process, materials, and research resources in *Designing Today's Manufactured Products.*

Instructional Materials:

(M) Assembling a Car

(B) *Designing Today's Manufactured Products* by John Lindbeck

(M) Forming a Can

(P) *Industrial Design*

Assessment Measures:

- From a display of all designs produced by the class, have each student identify the one he/she considers to be most successful and state reasons.

- Have students evaluate their own designs in terms of meeting the identified need; consideration of human needs and functions; aesthetics; product function; use of materials; complexity of forming processes; and time required for production.

Optional Product Design Problems:

As time permits, design problems from the following list may be assigned or the student may select one as an optional design problem.

- Redesign a hand tool or sports item to be functional, aesthetically pleasing, economical to produce.
- Design a substitute for the safety pin.
- Design a chair which is stackable with others of like kind.
- Design a device which is not a tray to carry six glasses or cups.
- Design a toothpaste container without a screw top.

Performance Objective 3:

- Identify the design characteristics of an interior or an industrial design product.

Performance Objective 4:

- Describe the steps necessary for developing a functional design.

Suggested Sequence for Instruction:

1. Prior to this century, architects designed their own interiors, and manufacturers relied on the decorating skills of various craftsmen. As investments in building and manufacturing increased, the need evolved for specialists to design interior spaces to be compatible with architecture and other specialists to integrate pleasing and functional forms with manufactured products. Sometimes the two specialties now are combined and interior elements must be fabricated to specifications, as in airplanes or stores. Industrial designers and interior designers now make important contributions to built environments.

   Interior design has achieved recognition as a profession through the efforts of major architects Frank Lloyd Wright and Mies Van der Rohe, and through its emphasis at the Bauhaus school in Germany. The Bauhaus espoused the theory that architects, painters, and sculptors must recognize the composite character of a building. Usually, commercial interiors are designed by professionals while homeowners rely on their own preferences or take ideas from articles published on the subject.

   The field of industrial design is more closely allied with the economics of manufacturing. Because large investments are made in producing commercial products, business turns to industrial designers to research, design, and package their goods. After a careful analysis of the consumer's preferences and needs and a consideration of engineering and manufacturing problems, designers attempt to develop economical, functional, and attractive designs that can be widely marketed or can serve a specific purpose.

2. Select a variety of common objects for study such as a kitchen utensil, a chair, a faucet, or desk lamp. Or an interior like that of a boat or a van may be preferred by some students. (Refer to *Designing Today's Manufactured Products* by Lindbeck.)

   Students and teacher should collect a wide variety of photos of the object or interior as it has appeared over a time span in merchandise catalogs.

Studying all examples, have the class develop a list of characteristics of appearance, function, price range, maintenance features, etc., of each. Singly or in groups, students should design a questionnaire to determine which variation of each characteristic of the chosen item a random group of consumers would prefer. (See Appendix C for a sample survey questionnaire.) Students must distribute survey forms among schoolmates, collect them, and summarize the responses. Since a schoolwide survey represents a restricted age group, decisions on product design will be biased.

Working with the survey responses, each student should interpret information and produce a new design. At this point, methods of manufacturing, packaging, and marketing should be considered. If a product contains mechanical parts, the designed form must accommodate all necessary elements like motors and switches. Students should research the materials and the manufacturing processes to be used. Ideas should first be developed in a series of thumbnail sketches and notes. Each sketch should be evaluated using survey data, manufacturing limitations, and marketing requirements. After a class critique, the best idea should be developed into a rendering or prototype model. A surface finish imitating the materials used should be applied to the model of a product. Interior designs may also be presented in model form.

Instructional Materials:

(M) Assembling a Car

(M) Crafting a Chair

(B) *Designing Today's Manufactured Products* by John Lindbeck

(M) Forming a Can

(P) *Industrial Design*

(P) *Interior Design*

(B) *Packaging: The Contemporary Media* by Robert G. Neubauer

(B) "The Shakers," from *Design for the Real World Art and Man* by Victor Papanek

ASSESSMENT MEASURES:

- Compare survey data with the design solution.
- List the steps that were followed in developing a design.
- Display completed models and renderings in the library and take a popular vote on each group of solutions.

B. (*To be developed*)

Environmental Design

A. INTERIOR DESIGN

Instructional Objective 7. ***The student should be able to conceptualize some relationships between various components of a built environment.***

. **Performance Objective:**

. Explore the structure and organization of the theatre by participating in a stage production.

Suggested Sequence for Instruction:

1. Explain and discuss the role and responsibilities of each theatre department head.
2. Create a flowchart diagraming the structure and staffing of a product organization.
   . Add small tabs indicating the responsibilities of each student.
   . Conduct a tour of school stage facilities and identify stage nomenclature.
   . Discuss equipment, design, construction, decoration, assembly, manipulation, and technology necessary for a production.
3. From the following list of options, have each student select an area of strong interest and assume some role in responsibility for the production.

   Costume Design

   Display and Exhibit

   Graphics (posters, programs, tickets, and production)

   Illustration (program, posters)

   Lighting Technology

   Makeup

   Model Making

   Promotion and Publicity

   Properties

   Rendering

Set Construction

Set Decoration

Set Design

Special Effects

Stage Technology

Textile Design

4. Have students do the necessary research, preliminary sketches, models, and finished art work assigned to them within the established deadlines.

Assessment Measures:

- Have each student outline the organizational structure of a stage production.
- Administer a test in which the student will describe the stage layout and the function of facilities, using appropriate terminology.
- Assign reports on the responsibilities assigned within chosen areas of work.

B. URBAN PLANNING — CITIES OF THE FUTURE

Instructional Objective 7. ***The student should be able to conceptualize some relationships between various components of a built environment.***

- **Performance Objective 1:**
  - Identify the major structural components of a community and incorporate them in a design for a city.

Suggested Sequence for Instruction:

The average citizen may not know that city planning is a much broader activity than simply arranging and regulating land uses. The city planner helps the community make decision about its social and economic as well as its physical condition. City planners are concerned with the development of solutions to problems of living in changing urban communities. Maps show master plans for the development and implementation of policies and programs intended to govern change, direction, and coherence of city growth. The following unit deals mainly with physical characteristics, but capable students should be encouraged to consider social and economic issues. (Discuss and correlate this unit with a social studies teacher.)

Study the plans described in *Making the City Observable* by Wurman, and the text *Babylon to Brasilia* by Hiller. Discuss the advantages of planned communities as contrasted with typical urban sprawl. Look at planned communities like Brasilia, Brazil; Greenbelt and Columbia, Maryland; or Reston, Virginia. Discuss the overall street patterns and locations of shopping centers and business services in relation to public buildings, parks, and recreational areas. Contrast and compare the agrarian planning ideas expressed in Frank Lloyd Wright's Broadacre City with Le Corbusier's plan for Chandigash, India, and Paolo Soleri's megacities, designed to provide compact urban living, at the same time preserving the

countryside. Discuss open space as a community need. Discuss the location of apartments, multi-unit dwellingu, and single unit dwellings. Consider these questions: Is playground space adequately provided? Are hospitals, churches and schools easily available to each neighborhood? How far do I drive to work or school? Can I ride my bike or walk to the store? Where can I play ball? View and discuss the films *Why Man Creates* and *City: Heaven and Hell.*

Use small blocks of materials to represent structures, and make preliminary models of a planned community showing residential and business areas. Differentiate between apartments and multi-unit and single-unit dwellings. Locate public buildings and recreation areas. Plan access routes for easy movement of traffic into and out of the community. Translate this plan into a scaled drawing, using a coding system to identify various components.

Instructional Materials:

(B) *Art/Search and Self-Discovery* by James A. Schinneller

(B) *Babylon to Brasilia* by Carl Hiller

(B) *Cities Fit To Live In* by Walter McQuade

(M) *City: Heaven and Hell* MCPS F2839

(B) *Columbia and the New Cities* by Gurney Breckenfeld

(B) *Planning Our Town* by Martha E. Munzer

(M) *Why Man Creates* MCPS F4765

(B) *Your City Has Been Kidnapped* by Ron Jones

Performance Objective 2:

Formulate a solution to several community planning problems of the future based on a concensus of student opinions.

Suggested Sequence for Instruction:

1. The city is one solution to a number of problems that confront mankind today as they have in the past. Early cities grew out of a need for protection from an enemy and took the form of fortresses. Walls and moats that were rebuilt in ever larger circles have been replaced by bands of parklike neighborhoods in older cities like London. Similar "green belts" are now a planned element in urban design and serve our need to have access to nature. In planning for future cities, consideration should be given to psychological as well as physiological and ecological needs. Today city planners seek solutions that are appropriate for human values, limited energy resources, and optimum use of the natural environment. Many views of the future see our being dominated by machines or colonizing outer space because of dwindling resources on earth. The "small-is-beautiful" movement would limit future development. One future model is described in the movie *Star Wars,* which deals with an interplanetary society and an unknown energy source.

2. Some questions for discussion:

   What will transportation systems be like?

How will people communicate?

How will houses use space?

Will homes still have kitchens?

Will people go to the theatre? The country? Another planet?

What kind of clothing will be worn?

Will new sports develop?

How will the elderly, the sick, and the socially maladjusted be accommodated?

3. Models for city planning that take into account varying social factors may be predicated by art students, using a modified Delphi technique to formulate the scenario for a Utopian city.

4. After discussing future cities, students should volunteer their conceptions of housing, government, transportation, and social needs of the future. These responses, listed on the chalkboard, should lead students to a concensus of probable characteristics of the future city.

Instructional Materials:

(B) *Archigram* by Peter Cook

(B) *Architecture 2000: Predictions and Methods* by Charles Jencks

(M) *Cities and History: Changing the City* F4523

(M) *The Cities: To Build the Future* F5156

(B) *The City in the World of the Future* by Hal Hellman

(B) *City Planning: Games of Human Settlement* by Forrest Wilson

(B) *Defensible Space* by Oscar Newman

(M) *How to Look at a City* F4768

(B) *Operating Manual for Spaceship Earth* by Buckminster Fuller

(B) *Planning Our Town* by Martha E. Munzer

Assessment Measures:

- Using small blocks of materials to work out preliminary ideas, students can develop a drawing, model, or map of their future city and state its advantages and its limitatons.

- High ability students may provide drawings of special features such as the transportation system, methods of food distribution, recreational centers, schools, or housing.

- Working in groups, students may produce a mural or a three-dimensional conceptualization of their future city.

Culminating Activity

Instructional Objective 8. *The student should be able to demonstrate knowledge of visual communication, product design, or environmental design through a practical production effort.*

. **Performance Objective:**

. Plan, organize, and develop a complete production, either individually or as a member of a group.

Suggested Sequence for Instruction:

1. Allow each student to select a project within his/her area of interest or specialization.

   Consider the following:

   Architectural presentation

   Bulletin boards or exhibits

   Displays or exhibits

   Literary arts magazine

   Movie film

   Newspaper art

   Publicity

   Stage production

   Videotape

   Yearbook art

2. Have each student develop a progression of steps from the planning stage to the final product.

   Include the following:

   . Proposal, discussion with art teacher, rough sketches

   . Time outline and established deadlines

   . Comprehensive design or model for production or final product

Assessment Measure:

Evaluate student efforts in terms of the degree to which:

. plans and organization for proposed project were submitted

- work reflected research, where necessary
- work stages were identified and deadlines met
- finished work reflected acceptable use of media tools and techniques
- work was displayed and critiqued
- responsibility was accepted for the care and safe use of tools, media, equipment, and/or facilities

COMMERCIAL ART I AND II
GENERAL BIBLIOGRAPHY

Asterisked books (*) are listed as MCPS approved texts.

Some out-of-print (O.P.) books might be located through Montgomery County libraries, Montgomery College libraries, or in professional art libraries.

Anderson, Arthur D. *A Designer's Notebook*. Bloomington, Ill.: McKnight and McKnight Publishing Co., 1966.

For the student of industrial design. Can effectively be used in art since it covers the elements and principals of art and design. Especially valuable as a resource for three-dimensional design concepts.

Anderson, Donald M. *Elements of Design*. New York: Holt, Rinehart and Winston, Inc., 1961.

In terms of two-dimensional graphic representation, this book deals with the structure of effective communication in world art and the structure of our environment. Relates classroom experiences with those of the student's background.

Baker, Stephen. *Visual Persuasion*. New York: McGraw-Hill, 1961. O.P.

The author presents the psychology and techniques of advertising art and photography and the effect of pictures on the subconscious. An excellent reference even though it is slightly dated in terms of current trends.

Bevlin, Marjorie B. Elliot. 3rd ed. *Design Through Discovery*. New York: Holt, Rinehart and Winston, Inc., 1977.

The formal elements of organization as found in nature are applied to created objects and art forms. The author states that design is not a project synthesized by people but rather has its origins in the natural order of the universe. Bevlin reviews design in 15 types of visual expression including handcrafts, advertising, fashion, photography, painting, sculpture, architecture, interiors, and urban development.

Bockus, H. William, Jr. *Advertising Graphics*. 2nd ed. New York: Macmillan Publishing Co., Inc., 1974.

This text is designed to be used by the advertising artist. It shows tools, design elements, and production processes that concern an ad designer. Philosophies of art, economics, and education are discussed and related to the advertising field.

Breckenfeld, Gurney. *Columbia and the New Cities*. New York: Ives Washburn Inc., 1971. O.P.

This is the story of the new-city movement as it first began in Europe and is now underway in the United States. One author delves into early new towns in America, discusses Lake Havasu City, and concludes with four chapters on Columbia, Maryland. Sparsely illustrated with black-and-white photographs.

Brummitt, Wyatt. *Kites*. New York: Western Publishing Co., 1971.

This small paperback book is profusely illustrated with diagrams of kites and directions for their construction.

Calle, Paule. *The Pencil*. New York: Watson-Guptil Publications, 1975.

The varieties of pencils, paper surfaces, fixatives, and erasers are covered as well as basics of drawing and principles of composition. Step-by-step demonstrations. Beautifully illustrated.

Carroll, David. *Make Your Own Chess Set*. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Each page shows an example of a chess set which was designed from found materials. A list of materials accompanies each illustration.

Cataldo, John W. *Lettering: A Guide for Teachers.* Worcester, Mass.: Davis Publishing Co., Inc., 1974.
The author introduces a basic approach to the many styles of lettering and encourages individual experimentation.

———. *Graphic Design and Visual Communication.* New York: International Textbook Co., 1966. O.P.
This is a beautiful approach to semeiology, typology, and visual symbology in print, layout, etc.

Collier, Graham. *Form, Space and Vision.* 3rd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1972.
Collier has written a book of exercises involving the imagination as well as skill. In fact, developing student imagination is a major focus of this text. Well illustrated and organized.

Cook, Peter (ed.). *Archigram.* New York: Praeger Pubs., 1973. O.P.
Here is a fanciful and stimulating view of the future with emphasis on its visual aspects. The ideas and drawings in this book were produced during the 1960's by a team of young British architects.

Corson, Richard. *Stage Makeup.* 5th ed. New York: Meredith Publishing Co., 1974.
This book remains the standard text and reference on stage makeup. Easily understood, it contains much basic information plus tips on special effects. Well illustrated with black-and-white photos.

Craig, James. *Production for the Graphic Designer.* New York: Watson-Guptill Publishing Co., 1974.
Craig explains the production of printed matter with well-illustrated sections on typesetting, printing, paper, inks, color, folding, binding, and mechanicals.

Descombes, Roland. *Illustrators 17* (or current edition). New York: Hastings House Pubs., Inc., 1976. O.P.
This is an annual publication of the year's best American illustrations. A fantastic source of ideas and inspiration.

Dreyfuss, Henry, and Fuller, R. Buckminster (eds.). *Symbol Sourcebook: An Authoritative Guide to International Graphic Symbols.* New York: McGraw-Hill Book., 1972.
This dictionary contains over 200 pages of internationally recognized symbols including sections on basic shapes, colors, and graphic forms.

Evans, Helen Marie. *Man the Designer.* New York: Macmillan Publishing Co., 1973.
An outstanding reference on the elements and principles of design as related to created objects and environmental art, with historical and contemporary application. Profusely illustrated, it presents effectively the evaluation of product design and encourages confidence and discrimination in making practical and aesthetic selection.

Felton, Charles J. *Layout Four: Printing Design and Typography.* St. Petersburg, Fla: Charles J. Felton, 1970.
This large book, with numerous illustrations in black and white, covers layout functions; copy analysis; formats; tools; techniques; design; types; typography; reproduction; and color.

Fern, Alan M. *Word and Image.* New York: Museum of Modern Art, 1968. O.P.
Photos of the posters in the collection of the Museum of Modern Art are accompanied by a text which describes the major movements or styles related to poster design.

Finch, Christopher (ed.). *The Art of Walt Disney.* New York: Harry N. Abrams, 1975.
Disney's career is described with explanations of basic techniques of animation and examples of story sketches, layouts, animated drawings, and background painting.

Fletcher, Alan; Forbes, Colin; Gill, Robert W. *Graphic Design: Visual Comparisons.* New York: Van Nostrand Reinhold Co., 1963. O.P.

This is a collection of solutions to advertising and communication problems that are efficient and imaginative.

Fluchere, Henri-Grainger; and Melvin-Masacchia, John. *Airbrush Techniques for Commercial Art.* 2nd ed. New York: Van Nostrand Reinhold Co., 1961. O.P.

A general introduction to the medium is followed by 12 student lessons and 5 professional exercises. Amply illustrated, the text covers special effects, selection of papers, and photo retouching.

Foustle, Alfred. Drafting Techniques for the Artist. New York: Sterling Publishing Co., 1972. O.P.

This excellent source of techniques for developing a variety of projections for illustration includes orthographic projection and parallel and angular perspective. Examples of these applications are given.

Franklin, Julian, and Tanner, John. *An Encyclopedia Dictionary of Heraldry.* New York: Pergamon Press, 1970. O.P.

Here is a well illustrated (black-and-white and some color) volume containing an alphabetical listing of names, terms, definitions, and explanations of the principles of the science of heraldry. It contains an essay on the use of the coat armor and insignia in the United States and other countries.

French, Thomas E. *Perspective Drawing.* New York: McGraw-Hill, 1972.

A manual of drawing techniques for the engineer and draftsman.

Fuller, R. Buckminster. *Operating Manual for Spaceship Earth.* Simon and Schuster, 1969, 1973. O.P.

This futurist/architect provides a succinct summary of what has been on his mind for years. His illusory language and complex message, however, make demands on the intellect in this short work, in which he considers the planet Earth as a traveling spaceship.

Gallo, Max. *The Poster in History* . New York: McGraw-Hill, 1974.

315 pages, extensively illustrated in full color showing examples of posters from 1789 to the 70's. A bibliography is included.

Gibby, Joseph Clifford. *Technical Illustration: Procedure and Practice.* Chicago: American Technical Society, 1970. O.P.

An excellent supplementary reference for contemporary techniques, graphic processes. A well-illustrated practical text and an excellent resource.

Gill, Robert W. *Rendering with Pen and Ink.* New York: Van Nostrand Reinhold Co., 1973. O.P.

A comprehensive text for the more advanced student. Heavy on architectural subject matter. Good concise explanation of orthographic projection and perspective.

Gordon, Stephen F. *Making Picture-Books.* New York: Van Nostrand Reinhold Co., 1970. O.P.

A how-to book demonstrating one method of creating a visually stimulating, sequential picture book. The author is a high school teacher and the book is illustrated entirely with student work.

Gray, Bill. *Studio Tips for Artists and Graphic Designers.* New York: Van Nostrand Reinhold Co., 1976.

This book presents the kind of practical assistance that comes only from years of experience. It includes 145 studio tips that make work easier and faster.

Guptill, Arthur L. *Drawing with Pen and Ink*. New York: Van Nostrand Reinhold Co., 1961. O.P.

An excellently written and superbly illustrated book. Through the use of some fine examples, the author shows the step-by-step procedure in the creation of a finished illustration. Some personal philosophy as well as professional tips are included.

Hainaux, Rene (ed.). *Stage Design Throughout the World 1970-75*. New York: Theater Art Books, 1976.

A large picture book with notes in English and French.

Halse, Albert O. *Architectural Rendering: The Technique of Contemporary Presentation*. 2nd ed. New York: McGraw-Hill Book Co., 1972.

A most comprehensive source of information, examples, and direction on techniques used in architectural rendering. Chapters are devoted to pencil, lithopencil, pen and ink, charcoal, watercolor, tempera, airbrush pastel, and mixed media. Every aspect of rendering is covered — history, interior, exterior, perspective, light, reflection, nature, textures, etc. A must for commercial art and architectural drawing classes.

Halsted, Byron D. (ed.). *Barns, Sheds and Outbuildings*. Brattleboro, Vt.: Stephen Greene Press, 1977.

Information and 257 illustrations on the placement, design, and construction of farm buildings. A reprint of an 1881 publication.

Hanks, Kurt; Belliston, Larry; and Edwards, Dave. *Design Yourself!* Los Altos, Cal: William Kaufmann, Inc., 1977.

Extensively illustrated, pratical suggestions for developing commercial designs.

Heck, J. G. (ed.). *Encyclopedia of Source Illustrations*. Hastings-on-Hudson, N.Y.: Morgan and Morgan, Inc., 1972.

Five thousand steel engravings illustrating military and naval sciences, architecture, mythology and religious rites, the fine arts, and technology.

Helfman, Elizabeth S. *Signs and Symbols Around the World*. New York: Lothrop, Lee and Shepard Co., 1967.

Contains signs and symbols from picture writing, numbers, religions, signs for science and industry along with signs and symbols for today and tomorrow. Well illustrated with black-and-white drawings.

Hellman, Hal. *The City in the World of the Future*. New York: M. Evans and Co., Inc., 1970.

Excellent book on building and planning cities. Deals with projected future needs and future materials. Discusses university cities, experimental cities, and megastructures, as well as "cities of the sea."

Herdeg, Walter (ed.). *Graphis Annual of 1978-1979: International Annual of Advertising and Editorial Graphics*. Zurich: Philadelphia: Hastings Books, 1978-79.

A true "visual feast." A yearly collection of the best graphics in advertisements, annual reports, booklets, book jackets, record covers, trademarks, letterheads, magazine covers, films, and television. An endless source of ideas.

Hiller, Carl E. *Babylon to Brasilia: The Challenge of City Planning*. Boston: Little, Brown and Co., 1972.

A photographic essay on the problems facing cities around the world and some solutions to those problems. An appendix lists schools which offer bachelor's programs and two-year professional programs in city planning.

Hohauser, Sanford. *Architectural and Interior Models.* New York: Van Nostrand Reinhold Co., 1970.

The most comprehensive text on the subject of model making. Complete with information on tools, their use, materials, methods, supplies, suppliers, and price lists. The author, a professional, covers all facets of models from the most simple to the most complex through an easily understood text, diagrams, charts, and a wealth of illustrations.

Holland, Lawrence (ed.) *Who Designs America.* Garden City, N.Y.: Doubleday, 1966. O.P.

A thoughtful analysis of design today. Its mass produced mistakes and the impact of political and social forces are discussed by various authors.

Horn, George F. *Visual Communication: Bulletin Boards, Exhibits, Visual Aids.* Worcester, Mass.: Davis Publications, 1973.

A how-to-do-it book on planning, designing, and making visual materials for use in the classroom

Horning, Clarence P. *Handbook of Early Advertising Art* (2 vols.) 3rd ed. New York: Dover Publications, Inc. 1956. O.P.

A collection of cuts depicting animals, sports, trades, vehicles, birds, etc.

How to See. Washington, D.C.: U.S. Government Printing Office, 1973.

A small paperback booklet that is filled with photographs and a short text which discusses sociological implications for design.

Jacques, Robin. *Illustrators at Work.* London: Studio Press (Longacre Press Ltd.), 1963. O.P.

A brief history of illustration and the processes of reproduction followed by a step-by-step explanation of line drawing for reproduction. The main bulk of the book is concerned with current master illustrators and their work. Ends with a thought-provoking essay on "The Future for Illustration."

Janke, Rolf. *Architectural Models.* New York: Architectural Book Publishing Co., 1978.

Deals with architectural structures through models of a high professional quality. A good student reference.

Jencks, Charles. *Architecture 2000: Predictions and Methods.* New York: Praeger Pubs., 1971. O.P.

The trends, both social and technological, which will determine the future development of architecture. Relates recent futuristic proposals to specific technologies, discusses political trends, and maintains a good balance between emphasis on ideas and on hardware.

Jones, Ron. *Your City Has Been Kidnapped.* Menlo Park, Cal.: Addison-Wesley Publishing Co., 1972.

An informally designed booklet which describes ways to become more aware of one's community.

Kepes, Gyorgy. *Sign, Image, and Symbol.* New York: George Braziller, 1966. O.P.

Twenty essays on communication through the use of symbols.

———. *Module, Proportion, Symmetry, Rhythm.* New York: George Braziller, 1966.

Four essays on the scientific structure of the modular concepts in architecture, the plastic arts, and music.

Kepes, Gyorgy (ed.). *The Man-Made Object.* New York: George Braziller, Inc., 1966. O.P.

A series of essays by designers, architects, painters and sociologists on man-made objects from trifles to buildings, and their aesthetic, psychological, environmental, and sociological impact.

———. *Structure in Art and in Science*. New York: George Braziller, 1965. O.P.

A compilation of a series of essays by noted scientists, psychologists, architects, artists, and other professionals relative to the concept of structural principles, organic and inorganic, as they influence our physical and artistic world of the 20th century.

Kicklighter, Clois. *Architecture: Residential Drawing and Design*. South Holland, Ill.: Goodheart-Wilcox Co., 1976.

A comprehensive introduction to the field of residential architecture with chapters on planning, design and presentation drawing.

Lem, Dean P. *Grahics Master*. Los Angeles: Dean Lem Associates, 1977.

A workbook of planning aids, reference guides, and graphic tools for the design, estimating, preparation, and production of printing and print advertising.

Lindbeck, John R. *Designing Today's Manufactured Products*, 2nd ed. Bloomington, Ill.: McKnight & McKnight Publishing Co., 1972.

Discusses design for yesterday and today. Chapters on the design process, design materials, and research resources. A good introduction to product design.

McHarg, Ian L. *Design with Nature*. Garden City, N.Y.: The Natural History Press, 1971.

A knowledgeable book on ecological design which advocates human cooperation and biological partnership with nature. Gets into some technical aspects of ecology but is basically readable. Well-designed and well illustrated with photographs, diagrams, and charts.

McIlhany, Sterling. *Art as Design as Art*. New York: Van Nostrand Reinhold Co., 1970. O.P.

The book ranges through all aspects of modern living, examining man-made objects and their design development. An instructive text and 250 illustrations make this a very basic reference.

McQuade, Walter (ed.). *Cities Fit To Live In*. New York: Macmillan Publishing Co., 1971.

A book for thinking about cities. Divided into three sections — Problems, Plans, and Issues — the book is a collection of recent articles on the urban environment. Includes "Urban Violence and Contemporary Defensive Cities" by Robert Gold; "Planning and Using Resurrection City" by John Wiebenson; and "The Political Collapse of a Playground" by Mayer Spirjack. Illustrated with black-and-white photographs.

Massin. *Letter and Image*. New York: Van Nostrand Reinhold Co., 1970.

Some really good decorative alphabets and some very inventive images. A good source book for ideas and inspiration.

Maurello, S. Ralph. *Commercial Art Techniques*. New York: Leon Amiel Pub., 1963.

This book presents the functions of layout, lettering, design, and production, as well as the tools, available services, and work methods of the commercial artist.

Meyer, Franz Sales. *Handbook of Ornament*. New York: Dover Publishing Co., 1957.

This paperback book contains 3,002 illustrations of decorative design from the crafts and architecture of Eastern and Western cultures.

Mills, Vernon. *Making Posters*. New York: Watson-Guptill Publications, 1967. O.P.

Through a series of logical steps, the reader is shown how to make posters. The book is divided into the following sections: materials and equipment, possibilities and restrictions, and professional tips.

Moholy-Nagy, Laszlo. *Vision in Motion.* Chicago, Ill.: Paul Theobald Co., 1947.

Concentrates on the work of the Institute of Design in Chicago by work of students and faculty. Presents a broad general view of the interrelatedness of art and life. Good black-and-white illustrations.

Munzer, Martha E. *Planning Our Town.* New York: Alfred A. Knopf, 1964. O.P.

A clear, readable text on the subject of human communities and the forces that act on and unite them. The book deals with problems of city planning, problems of urban renewal, water supplies, air pollution control, land use, transportation, and problems or regional planning. Well organized and nicely illustrated with black-and-white photographs.

Neubauer, Robert G. *Packaging: The Contemporary Media.* New York: Van Nostrand Reinhold, 1973.

Examples of contemporary packages are illustrated and discussed, including an historical reference for each product. Design trends, processes, and materials are reviewed.

Newman, Oscar. *Defensible Space: Crime Prevention Through Urban Design.* New York: Macmillan Publishing Co., 1973.

Presents a system of design criteria for urban housing based on an analysis of problems in existing environments.

Oka, Hideyuki. *Five More Eggs: Traditional Japanese Packaging.* New York: Harper and Row, 1967.

Japanese design in traditional packaging.

The One Show: Annual of Advertising, Editorial, and Television Art and Design. New York: Watson-Guptill Publications, 1976. O.P.

A collection of the year's outstanding commercial art produced by working studios and free lance artists.

Papanek, Victor. *Design for the Real World: Human Ecology and Social Change.* New York: Random House, 197.

A new point of view for the industrial designer who is concerned about human survival-needs rather than the superficial needs of a consumer-oriented society.

Parker, W. Oren, and Smith, Harvey K. *Scene Design and Stage Lighting,* 3rd ed. New York: Holt, Rinehart and Winston, Inc., 1974.

A comprehensive survey with illustrations and photographs. Recent technical and theoretical trends are addressed.

Prohaska, Ray. *A Basic Course in Design.* New York: Van Nostrand Reinhold Co., 1971.

An introduction to drawing and painting. The emphasis is on form, spatial concepts and intuitive response to ideas. Written by a teacher with an understanding of the problems a teacher encounters.

Richards, Maurice. *The Rise and Fall of the Poster.* New York: McGraw-Hill, 1971. O.P.

A brief historical survey of posters. The first 30 pages provide an interesting insight into the beginnings and the development of posters. About 70 pages of illustrations, mostly in black-and-white, help to visualize this history.

*Ross, George F. *Speedball Textball for Pen and Brush Lettering,* 20th ed. Long Beach, N.Y.: Landau Book Co., Inc., 1973.

A handbook of lettering styles and speedball pen techniques.

Ross, John, and Romano, Clare. *The Complete Screen Print and the Lithograph.* New York: Macmillan Publishing Co., Inc., 1974.

The emphasis in this book is on the workshop approach to printmaking. The latest production techniques are explained. Profusely illustrated. Easily understood.

Rutledge, Albert. *Anatomy of a Park: The Essentials of Recreation Area Design.* New York: McGraw-Hill, 1971. O.P.

The essentials of recreation area planning and design.

Schinneller, James A. *Art/Search and Self-Discovery.* Scranton, Pa.: Davis Pub. Textbook Co., 1975.

An approved textbook, this large volume deals with the characteristics and scope of the visual arts encompassing both past and present. Chapters focus on an art form rather than on a chronological survey. Numerous photographs and diagrams contribute to the easy reading text.

Slythe, Margaret R. *The Art of Illustration, 1750-1900.* London: The Library Association, 1970. O.P.

A very scholarly, well-written history of illustration.

Snyder, John. *Commercial Artist's Handbook.* New York: Watson-Guptill Publications, 1973.

This is an encyclopedia compendium of graphic arts materials. A brief description of each, how to use it, and where to get it.

Stell, W. Joseph. *The Theatre Student: Scenery.* New York: Richards Rosen Press, Inc., 1970.

An excellent primer for the theatre scenery student. Illustrates basic proscenium scenery procedures. Appropriate for teacher or bright students, the book clearly explains concept development, basic construction, and effects. Well-illustrated and diagrammed, it serves as good reference for the student.

Walker, Les; and Milstein, Jeff. *Designing Houses: An Illustrated Guide.* Woodstock, N.Y.: Overlook Press, 1976.

A step-by-step guide to planning and designing a house. Written in layman's terms.

Watson, Ernest W. *Forty Illustrators — How They Work.* Freeport, N.Y.: Books for Libraries Press, 1946 (1970 reprint).

Since it was first published in 1946, this book serves as an excellent resource for studying the work of outstanding illustrators of the preceding period. Biographical descriptions of each artist are included.

Wildbur, Peter. *Trademarks.* New York: Van Nostrand Reinhold Co., 1966. O.P.

A collection of some of the most interesting and imaginative designs produced between the years 1956 and 1966.

Wilson, Forrest. *Architecture, A Book of Projects for Young Adults.* New York: Van Nostrand Reinhold Co., 1968.

This small text describes the more commonly used architectural and engineering systems with simple, practical suggestions for demonstrating each system.

———. *Architecture and Interior Environment: A Book of Projects for Young Adults.* New York: Van Nostrand Reinhold Co., 1972. O.P.

Describes simple classroom projects that can lead to a better understanding of structural principles, scale, space, and environment.

Wolk, D. *Visionary Cities: The Arcology of Paolo Soleri.* New York: Frederick A. Praeger, Inc., 1972. O.P.

Highly imaginative use of black on white and back lighting, etc. — for unusual graphic layout and typography.

Zakas, Spiros. *Furniture in 24 Hours.* New York: Macmillan Publishing Co., 1976.
Student designed furniture based on simple processes and common materials.

Zuk, William. *Sinetic Architecture.* New York: Van Nostrand Reinhold, 1970. O.P.
Evolutionary concepts and ideas for flexible architecture.

PHOTOGRAPHY-FILMMAKING-TELEVISION BIBLIOGRAPHY

Ackley, Clifford S. *Private Realities: Recent American Photography*. Boston: New York Graphic Society, 1975.

Amphoto Black and White Film Data Book. Garden City, N.Y.: American Photographic Book Publishing Co., Inc., 1975.

A reference for the use of all black-and-white film in a variety of sizes.

Andersen, Yvonne. *Make Your Own Animated Movies*. Boston: Little, Brown, and Co., 1970.

Half a dozen different methods of animation and various camera techniques are described and illustrated in very simple, easy-to-understand terms.

Barnouw, Erik. "So you think TV is hot stuff? Just you wait!" *Smithsonian*, July 1976, Vol. 7, No. 4, pp. 78-84.

This is an entertaining article about technological advances we may see in the not-too-distant future.

Bourgeois, Jacques. *Animating Films Without a Camera*. New York: Sterling Publishing Co., Inc., 1974.

A short book with lots of visual examples. Explains techniques of simple animation and necessary tools and materials.

Bryne-Daniel, Jack. *Grafilm*. New York: Van Nostrand Reinhold Co., 1970. O.P.

This book for serious students of filmmaking explores alternative multimedia approaches such as the use of leader, and various types of animation with and without a camera.

Carrier, Rick, and Carroll, David. *Action! Camera: Super Eight Cassette Filmmaking for Beginners*. New York: Charles Scribner's Sons, 1971.

An excellent reference on filmmaking with practical, step-by-step directions, well illustrated with a wealth of meaningful information.

Croy, O. R. *The Complete Art of Printing and Enlarging*. 13th ed. London/New York: (Amphoto-Focal) Hastings House Pubs., Inc., 1976.

Ordinary and elaborately controlled prints; straightforward and very tricky prints; new ideas and novel methods in a wealth of technical knowledge and personal experience.

———. *Croy's Creative Photography*. Garden City, N.Y.: (Amphoto-Focal) Hastings House Pubs., Inc., 1970.

Concerned with the problems of consciously controlled photographic design, the author shows how a specific creative idea can be transformed into an effective graphic representation by photographic means.

*Efrein, Joel L., *Video Tape Production and Communication Techniques*. Blue Ridge Summit, Pa.: TAB Books, 1970.

An introduction to equipment, production, and direction techniques for videotape programs.

Editors of Eastman Kodak Co. *Help Your Community. . .Through Photography*. Dobbs Ferry, N.Y.: Morgan and Morgan, Inc., 1973. O.P.

Instructs in the use of the camera. Many worthwhile photographs relating design within the environment.

Englander, David A., and Gaskill, Arthur L. *How To Shoot a Movie Story*. Dobbs Ferry, N.Y.:Morgan and Morgan, Inc., 1969.

A basic text on filmmaking; includes topics such as pictorial continuity, the reestablishing shot, overlap and matching action, and cut-ins and cut-aways.

Gernsheim, Helmut. *Creative Photography, Aesthetic Trends*. New York: Bonanza Books, 1974. O.P.

A scholarly history of photography with major emphasis on the aesthetic content of the photo.

Haffer, Virna. *Making Photograms: The Creative Process of Painting with Light*. New York: Hastings House Pubs., Inc., 1969.

An illustrated short course on how to make photograms as well as a collection of delightfully conceived images of many moods and levels.

Hilson, Peter J. *Photography: A Study in Versatility*. Garden City, N.Y.: Doubleday and Company, Inc., 1969. O.P.

Written for the layman this book is a lucid survey of the history of photography, the chemical basis of picture taking, and the extraordinary versatility of the photo process.

Hobson, Andrew and Mark. *Film Animation as a Hobby*. New York: Sterling Publishing Co., 1975.

A small, easy-to-read, and well-illustrated book that describes various kinds of animation with samples of numbered frames from a sequence. Special effects and editing techniques are also discussed.

Kodak Master Darkroom Data Guide. Rochester, N.Y.: Eastman Kodak. n.d.

Excellent reference guide. Contains easy-to-use-and-understand charts and computers for the various darkroom procedures from developing to printing.

Kodak Master Photoguide. Rochester, N.Y.: Eastman Kodak Co., 1974.

A pocket size reference book. Complete information for taking still pictures in black-and-white and color on miniature camera, roll, pack, and sheet films.

Kohn, Eugene. *Photography: A Manual for Shutterbugs*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965.

A very simple, easy reading, 60-page paperback explaining the basics of photography. Ideal for upper elementary or junior high students.

Kuhns, William, and Stanley, Robert. *Exploring the Film*. Dayton, Ohio: Pflaum-Standard, 1969.

Correlates with films in MCPS library. Junior high reading level. Describes the history and development of films and TV with reference to processes. Technical information not emphasized.

Kuhns, William, and Giarino, Thomas. *Behind the Camera*. Dayton, Ohio: Pflaum-Standard, 1970.

An extremely thorough exposition of student filmmaking techniques and problems with good appendices on selecting a camera, uses of videotape, and filming exercises.

Life Library of Photography. New York: Time-Life Books, 1972.

A seven-volume set of beautifully illustrated and edited books. The most comprehensive compilation of historic, scientific, and visually pleasing photos yet assembled into one publication. Volumes especially recommended are *The Camera; Light and Film;* and *The Print*.

Madsen, Roy P. *Animated Film — Concepts, Methods, Uses*. New York: Interland Publishing, Inc., 1969.

A useful book describing historical viewpoints and covering all aspects of animation, including terminology. Very comprehensive and detailed.

Mante, Harold. *Photo Design. Picture Composition in Black-and-White Photography.* New York: Van Nostrand Reinhold Co., 1978. O.P.

This book deals with the compositional elements (format, point, line, surface, variation of contrast) insofar as they affect the creation and criticism of a photograph. Well illustrated.

Mascelli, Joseph V., A.S.C. *The 5 C's of Cinematography.* Hollywood: Cine/Graphic Pubs., 1977 .

Practical, concise information presented in an unpretentious manner. One of the very best references on the subject of filmmaking.

Mattingly, Grayson, and Smith, Welby. *Introducing the Single Camera VTR System.* New York: Charles Scribner's Sons, 1973.

The text is easily read, is well illustrated, and would make a good single reference on the subject. It serves as a workbook of information on videotape recording equipment.

Newhall, Beaumont. *Latent Image.* Rochester, N.Y.: George Eastman House. Garden City, N.Y.: Doubleday and Co., Inc., 1967. O.P.

A scientific and technological history of the pioneering years in the creation of photography.

Papert, Jean. *Photomacography: Art and Techniques.* New York: Amphoto — American Photographic Book Publishing Co., 1971.

The art of taking pictures in extended close-up — from size to ten times life size — simply but eloquently described in this well illustrated book. A good basic text to discover design in nature (environment) through photography. Good basic photographic terminology and relevant information.

Platt, Joan (ed.). *Young Animators and Their Discoveries.* New York: Praeger, 1973. O.P.

Following some general notes on the production of animated films, the content consists of interviews with nine young filmmakers working with animation.

Sherman, Roger M., and Schonhaut, Barry. *Simply Super 8: A Basic Guide to Moviemaking.* Boston: Little, Brown and Co., 1977.

Designed to give the beginner basic moviemaking techniques with an emphasis on process rather than product.

Sussman, Aaron. *The Amateur Photographer's Handbook.* New York: Thomas Y. Crowell Co., 1973.

This book contains a wealth of information. Every imaginable type of photo is covered: landscapes, seascapes, architecture, clouds, studies, portraits, and night photography. It includes problems of copying, use of flash, home processing, etc. — the closest thing to a "photographer's bible."

*Upton, Barbara and John. *Photography.* Boston: Little, Brown and Co., 1976.

A condensed version of the Life Library of Photography. Includes units on history, the camera, optics, light and film, exposure, development, printing, mounting, lighting, and others.

Wakefield, George L. *Introduction to Photography.* New York: Amphoto: American Photographic Book Co., Inc., 1969. O.P.

This book gives a broad picture of the photographic process. It should enable the beginner to avoid the many pitfalls of photography and to learn quickly how to take photos of high technical quality.

Wakefield, George L. *Introduction to Photography.* New York: Amphoto: American Photographic Book Co., Inc., 1969. O.P.

This book gives a broad picture of the photographic process. It should enable the beginner to avoid the many pitfalls of photography and to learn quickly how to take photos of high technical quality.

Wenden, D. J. *The Birth of the Movies*. New York: E. P. Dutton and Co., 1975.

A brief history of the film from its primitive days to advent of "talkies." Movie history is discussed in terms of early styles, the movies as a business, and the movies' impact on society.

Zettl, Herbert. *Television Production Handbook*. 2nd ed. Belmont, Cal.: Wadsworth Publishing Co., Inc., 1977.

A systematic way of leading students through a series of activities related to television production.

CAREER INFORMATION BIBLIOGRAPHY

Note: Students interested in a career in graphic communications management, design, or education may qualify for one of 25 four-year scholarships available through a national scholarship program of the printing, publishing, and packaging industry.

For information, write to:

National Scholarship Trust Fund
Graphic Arts Technical Center
4615 Forbes Avenue
Pittsburgh, Pennsylvania 15213

A comprehensive list of scholarships and fellowships in art is available at the MCPS Visual Art Center.

A list of art schools around the world is also on file at the center.

American Art Directory. New York: R. R. Bowker Company, 1978.

This publication provides a complete listing of all colleges with departments of art together with offerings. Available in most library reference sections.

Doyle, Robert. *Your Career in Interior Design*. rev. ed. New York: Julian Messner, 1975. O.P.

Describes the job of the interior designer, including a variety of careers within the field and resources for further study.

Exploring Visual Arts and Crafts Careers: A Student Guidebook. Washington, D.C.: U.S. Government Printing Office, 1976.

An excellent overview of careers in the arts written in a style that would interest students. Includes job descriptions, definitions of art terms, and lists of periodicals and associations.

Greer, Michael. *Your Future in Interior Design*. New York: Richards Rosen Press, 1970.

This authoritative book describes qualifications and opportunities for a career in interior design.

Horton, Louise (ed.). *Art Careers*. New York: Franklin Watts, Inc., 1975.

Discusses, in brief, the requirements and opportunities available in commercial art, including architecture and city planning. A short list of schools which offer art and a list of professional organizations is included.

Johnson, George. *Your Career in Advertising*. New York: Julian Messner, Inc., 1966. O.P.

The variety of jobs and opportunities in advertising are described. Art, sales, research, and copywriting are among careers considered.

McLaughlin, Robert W. *Architect*. New York: Macmillan Company, 1962. O.P.

This book defines and describes architecture and how it is practiced.

Nelson, Roy P., and Ferris, Byron. *Fell's Guide to Commercial Art*. New York: Frederick Fell, Inc., 1972. O.P.

Includes what commercial art really is today; how to know what kind of commercial art you'd like most; how to get a job; a complete information survey.

Occupational Outlook Handbook, 1976-77 edition. Bulletin 1875. Washington, D.C.: U.S. Government Printing Office, 1978.

Occupational briefs about a wide variety of occupations. Includes nature of work, earnings, outlook for jobs in that field, education needed, and working conditions.

Pinney, Roy. *Careers with a Camera.* Philadelphia/New York: J.B. Lippincott Co., 1964. O.P.

Explores careers in photography. Describes the camera as an art tool and a means of communication.

Setzekorn, William David. *Looking Forward to a Career: Architecture.* Minneapolis: Dillon Press, Inc., 1974.

Discusses architecture and related fields like computer graphics, interior design, industrial design, sales, specification writing, and others.

RESOURCES

Art Associations and Societies

American Ceramic Society
65 Ceramic Drive
Columbus, Ohio 43214

American Institute of Graphic Arts
1059 Third Avenue
New York, New York 10021

American Watercolor Society
1083 Fifth Avenue
New York, New York 10028

Association of American Editorial Cartoonists
475 School Street, S.W.
Washington, D.C. 20024

Association of Art Museum Directors
P.O. Box 620
Lenox Hill Station
New York, New York 10021

Association of Medical Illustrators
6650 Northwest Highway, Suite 112
Chicago, Illinois 60631

Audubon Artists, Inc.
1083 Fifth Avenue
New York, New York 10028

Industrial Designers Society of America
1750 Old Meadow Road
McLean, Virginia 22101

National Art Education Association
1916 Association Drive
Reston, Virginia 22091

National Association of Women Artists, Inc.
41 Union Square
New York, New York 10003

National Cartoonists Society
9 Ebony Court
Brooklyn, New York 11229

National Sculpture Society
777 Third Avenue
New York, New York 10017

National Society of Mural Painters, Inc.
41 East 65th Street
New York, New York 10021

National Society of Painters in Casein and Acrylic, Inc.
1083 Fifth Avenue
New York, New York 10028

Print Council of America
National Gallery of Art
Constitution Avenue at Sixth Street, N.W.
Washington, D.C. 20565

Society of American Graphic Artists
1083 Fifth Avenue
New York, New York 10028

Society of Animal Artists, Inc.
151 Carroll Street
City Island, Bronx, New York 10464

Society of Architectural Historians
1700 Walnut Street, Room 716
Philadelphia, Pennsylvania 19103

Society of Illustrators
128 East 63rd Street
New York, New York 10021

Society of Medalists
c/o Donald A. Schwarts, Treasurer
Old Ridgebury Road
Danbury, Connecticut 06810

Southern Association of Sculptors, Inc.
c/o Jeffrey Bayer
University of Alabama
Huntsville, Alabama 35805

Stained Glass Association of America
c/o Naomi Mundy, Executive Secretary
1125 Wilmington Avenue
Saint Louis, Missouri 63111

Periodicals

American Cinematographer
ASC Holding Corporation
1782 N. Orange Drive
Hollywood, California 90028

Art and Man
902 Sylvan Avenue
Englewood Cliffs, New Jersey 07632

Art Direction Magazine
Advertising Trade Publications, Inc.
19 West 44th Street
New York, New York 10036

Audio-Visual Communications
750 Third Avenue
New York, New York 10017

Communication Arts Magazine
P.O. Box 10300
200 California Avenue
Palo Alto, California 94303

Craft Horizons
American Crafts Council
16 East 52nd Street
New York, New York 10022

Graphis Annual
Walter Herdez Graphis Press
45 Nuschelerstr 8001
Zurich, Switzerland

The Illustrator
Art Instruction School
Minneapolis, Minnesota

Industrial Design
One Astor Plaza
New York, New York 10036

Interior Design
150 East 58th Street
New York, New York 10022

Media and Methods
Media and Methods Institute, Inc.
134 North 13th Street
Philadelphia, Pennsylvania 19100

Packaging Design
1028 Connecticut Avenue, N.W.
Washington, D.C. 20036

Peterson's Photographic Magazine
8490 Sunset Boulevard
Los Angeles, California 90069

Print
6400 Goldsboro Road, N.W.
Washington, D.C. 20034

Super 8 Filmaker
PMS Publishing Company, Inc.
P.O. Box 10052
Palo Alto, California 94303

Technical Photography
PTN Publishing Corporation
250 Fulton Avenue
Hempstead, New York 11550

Sources for Approved Art Reproductions

National Gallery of Art
Washington, D.C.

Phaidon-Dutton
201 Park Avenue S.
New York, New York 10003

Shorewood Reproductions, Inc.
10 East 53rd Street
New York, New York 10022

Van Nostrand Reinhold Company
300 Pike Street
Cincinnati, Ohio 45202

Kits

"The Advertising Layout Person." Roanoke, Tex.: Cassettes Unlimited, 1976.
Filmstrips with tapes and discussion guide.

"The Commercial Artist or Technical Illustrator." Roanoke, Tex.: Cassettes Unlimited, 1976.
Filmstrips with tapes and discussion guide.

"A Complete Course in Beginning Photography," Tempe, Ariz.: University of Arizona, 1973.
Twelve color/sound filmstrips, cassettes, and instructional guides.

"Creating A Movie." Jamaica, N.Y.: Eye Gate House, Inc., 1972.

"Creating Your Own Filmstrip." Chicago: International Film Bureau, 1973.

"Creative Photography: Camera Series." Tempe, Ariz.: University of Arizona, 1973.
Six filmstrips, cassettes and instructional guides.

"Creative Photography: Darkroom Series." Tempe, Ariz.: University of Arizona, 1971.
Six filmstrips, cassettes, and instructional guides.

"Fine Arts: Career Opportunities." Boston: Houghton Mifflin Co., 1978.
Complete descriptions of most fine arts careers including reference to the nature of work, duties and responsibilities, working conditions, qualifications, earnings, and outlook. Cards. No cassettes nor filmstrips.

"Photography for Kids." Tempe, Ariz.: University of Arizona, 1975.
Six filmstrips, cassettes, 4 posters, and teacher's guide
Your Camera: The Not-So-Magic Box
Making a Pinhole Camera
Taking Pinhole Pictures
Using Your Camera
Learning To See
Developing Your Own Point of View

"Planning the Motion Picture." Los Angeles: Visuals for Teaching, 1967.

"Producing Effective Audiovisual Presentations." Tempe, Ariz.: University of Arizona, 1975.
Eight filmstrips, cassettes, and instructional guides
Planning
Graphics
Photography
Photographic Copying
Sound Recording
Presentation Systems
Slide Copying
Producing Filmstrips

"Three Dimensional Displays." Burbank, Cal.: Encore Visual Education, Inc.
Four sound filmstrips entitled Ideas for Displays, Planning Displays, Creating Displays, and A Unit Display.

Filmstrips

Educational Dimension Corporation
Great Neck, New York

402 Art Careers in Advertising
404 Careers in Photography
408 Fashion Design
409 Drafting
407 Filmmaking
415 Graphic Arts
(Available for preview from the MCPS Visual Art Center at Einstein High School)

"Images of Man" Series
Scholastic Book Services
904 Sylvan Avenue
Englewood Cliffs, New Jersey 07632
(Two sets include 8 filmstrips, each depicting the work of an outstanding photographer.)

Eyegate House
146-01 Archer Avenue
Jamaica, New York 11435

Suggested Field Trips

MCPS Educational Services Center, Graphic Arts Section
Bureau of Standards, Gaithersburg, Maryland
Washington Post (editorial and advertising departments)
Defense Mapping Agency, Topographic Center, Bethesda, Maryland
Cameron Station, U.S. Army, Alexandria, Virginia
U.S. Park Service, Graphic Design, Motion Picture and AV Branch, Harpers Ferry, West Virginia
Sentinel, Gaithersburg, Maryland
Government Printing Office, Washington, D.C.
Woodward and Lothrop (downtown store) display and graphic arts

Handbooks

MCPS *Safety Handbook*
Occupational Outlook Handbook, U.S. Bureau of Labor Statistics, Washington, D.C.
Preliminary Exploration of Occupations in the Arts and Humanities. Cambridge, Massachusetts. Technical Education Research Centers, 1975.

Films Available in the MCPS Film Library

"The Art of Film" Series, 1975.

6758 Screen Writing 24 min.
6759 The Camera 20 min.
6760 Performance 20 min.
6761 Music and Sound 21 min.
6762 The Edited Image 21 min.
6763 The Director 23 min.

6065 Basic Film Terms: A Visual Dictionary 1970 15 min.
6297 Basic Movie Making, 1973 12 min.
6808 Careers in Art 16 min.
6753 The Cinematographer, 1969 17 min.
4523 Cities and History: Changing the City
5156 The Cities: To Build the Future
2839 City: Heaven and Hell 28 min.
6742 D for Design, 1960 23 min.
6335 The Experimental Film, 1962 28 min.
5368 The Eye Hears, the Ear Sees 58 min.
6113 A Film About Filmmaking, 1972 17 min.
6365 Film: The Art of the Impossible 27 min.
6550 Graphic Arts 50 min.
4768 How To Look at a City
6738 Move, 1972 16 min.
6651 Our Art Class Makes a Film, 1971 16 min.
6298 Photography: How It Works, 1973 10 min.
5318 The Refiner's Fire 6 min.
6361 The Screen Play, 1972 13 min.
6338 Shape of Films to Come, 1968 25 min.

6750 Silk Screen Process in the Graphic Arts 17 min.
6618 TV Producer/Director, 1974 14 min.
4765 Why Man Creates, 1968 29 min.
6209 Toy Commercials 10 min.
4747 Toys 8 min.

Commercial Films

How a Commercial Artist Works 14 min.
Modern Talking Picture Service
927 19th Street, N.W.
Washington, D.C.

Film Catalogs

Lettraset Films
33 New Bridge Road
Bergenfield, New Jersey 07621

Films About Animation

6364 Frame by Frame — The Art of Animation 13 min.
7011 Incredible Art of Animation — A Living Art Form, 1972 10 min.
6367 Six Short Films 7 min.

MCPS Animated Films

4688 The Adventure of the Asterisk
5183 Animal Form
6678 Automania 2000
5973 The Boiled Egg
6681 Chicken
6238 Chromophobia
4613 Clay
1564 Donald in Mathemagic Land
5211 The Dot and the Line
5850 Duet
5406 Ersatz
6362 Frank Film
5592 The Hand
6137 Harold and Cynthia
5504 Hypothesa Beta
5758 In a Box
2800 Night on Bald Mountain
5123 Notes on a Triangle
6063 Omega
5678 Order in the House
5188 Patterns of Motion

7161 People, People, People
6391 The Pretty Lady and the Electronic Musicians
5199 Trio for Three Angles
6336 What on Earth?

Free Films

0344 Basic Movie Making, 16 mm sound, color, 1973 14 min.
(8344 Also in Super 8 mm)
Nontechnical explanations of movie making techniques
Eastman Kodak Company
Audio-Visual Library Distributors
343 State Street
Rochester, New York 14650

The Best We Can Do, 1968 15 min.
Planned communities vs. suburban sprawl
American Institute of Architecture
1735 New York Avenue, N.W.
Washington, D.C. 20006

Brush and Color Making: The Manufacturing Process, 16 mm sound, color 11 min.
Features a trip through the brush and color factories
of M. Grumbacker, Inc.
Association Sterling Films

Design for a City, 1963 27 min.
Features the planning and execution of a comprehensive urban renewal program
in Philadelphia; based on the film Form, Design, and the City
Reynolds Metals Company
Public Relations Department
6601 West Board Street
Richmond, Virginia 23230

K-554 Design for People, 16 mm sound, color 12 min.
Discusses the design in instructional materials, postage stamps,
direction signs and government pamphlets
Association Sterling Films
600 Grand Avenue
Ridgefield, New Jersey 07657

K-295 Design — Human Life and Material Things, 16 mm sound, color 17 min.
How Japanese designers combine traditional sense of beauty with functionalism.
Association Sterling Films
600 Grand Avenue
Ridgefield, New Jersey 07657

Designing the Urban Environment, 1976 26 min.

Outlines the interdisciplinary team approach to city planning as it has been used in several American cities

RHR Film Media
1212 Avenue of the Americas
New York, New York 10036

The Environment: Everything Around Us 13 min.

Contrasts natural and human made environments

Encyclopaedia Britannica Films
Chicago, Illinois

An Environment for People, 1969 13 min.

Discusses quality of the physical environment using examples of good design in Columbus, Ohio

Ohio State University
Cinema Department
156 West 19th Avenue
Columbus, Ohio 43210

Finland Designs for Living 20 min.

Outstanding examples of industrial design

Films of the Nations
7820 20th Avenue
Brooklyn, New York 11214

Heritage of Green 20 min.

The history of the park programs of Montgomery and Prince George's Counties, Maryland, including planning, land acquisition, development, maintenance and the future of the park system

Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue, Silver Spring, Maryland

0365 How Winning Teen-age Movies Are Made, 16 mm sound, color, 1974 28 min.

Features winners from a previous Kodak Teenage Movie Awards contest

Eastman Kodak Company
Audio-Visual Library Distributors
343 State Street
Rochester, New York 14650

Monument to the Dream, 1967 27 min.

Shows planning and construction of Saarinen's Gateway Arch in St. Louis as a memorial to pioneers

Association Sterling Films
600 Grand Avenue
Ridgefield, New Jersey 077857

90

The Noisy Landscape, 1968 15 min.

Shows how well-planned graphics add to the beauty of a community
American Institute of Architects
1735 New York Avenue, N.W.
Washington, D. C. 20006

The Right of Way, 1968 14 min.

Shows how highways affect cities and how balanced transportation systems can improve urban areas
American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006

The Statue of Liberty — Body of Iron, Soul of Fire 30 min.

Traces the history and symbolism of the Statue of Liberty
West Glen Films
565 Fifth Avenue
New York, New York 10017

Street Graphics, 1971 10 min.

Shows how attractive signs and billboards can be.
Modern Film Library
1687 Elmhurst Road
Elk Grove, Illinois 60007

Sources of Materials and Sample Products

Artype
345 East Terra Cotta
Crystal Lake, Illinois 60014

Bienfang Paper Company
Division of Hunt Manufacturing
1405 Locust Street
Philadelphia, Pennsylvania 19102

Charles T. Bainbridge Sons, Inc.
808 Georgia Avenue
Brooklyn, New York 11207

Chartpak
1 River Road
Leeds, Massachusetts 01053

Crescent Cardboard Company
100 West Willow Road
Wheeling, Illinois 60090

Geller Artists Materials, Inc.
116-120 East 27th Street
New York, New York 10016
(color-aid paper)

Hammermill Papers
Erie, Pennsylvania 16512

Lettraset
33 New Bridge Road
Bergenfield, New Jersey 07621

Light Impressions Corporation
Box 3012
Rochester, New York 14614
(photo books and slide sets)

Upper and Lower Case
The International Journal of Typographers
216 East 45th Street
New York, New York 10017

Yasutomo and Company
24 California Street
San Francisco, California 94111
(papers, art tools)

Local Sources for Graphics Arts Supplies

ADCOM, Inc.
12211 Nebel Street
Rockville, Maryland 20850

ADCOM, Inc.
502 West Broad Street
Falls Church, Virginia
(Seminars on copy camera operation)

Arcon Screen Printing
4800 Davron
Laurel, Maryland

Federal Supply Company, Inc.
1108 K Street, N.W.
Washington, D.C.

Visual Systems Company, Inc.
1596 Rockville Pike
Rockville, Maryland 20852

Professional Associations

The Advertising Federation of America
250 West 57th Street
New York, New York

American Advertising Federation
655 Madison Avenue
New York, New York 10021

American Association of Advertising Agencies
200 Park Avenue
New York, New York 10017

American Association of Museums
2306 Massachusetts Avenue, N.W.
Washington, D.C.

Art Directors Club of Maryland
13 West 25th Street
Baltimore, Maryland

Art Directors Club of Virginia
1310 Vassar Road
Richmond, Virginia

Art Directors Club of Washington
734 Fifteenth Street, N.W.
Washington, D.C.

American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20036

American Institute of Graphic Arts
1059 Third Avenue
New York, New York 10021

American Institute of Interior Designers
673 Fifth Avenue
New York, New York 10022

American Institute of Planners
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Art Directors Workshop, Inc.
219 East 44th Street
New York, New York

American Toy Institute
200 Fifth Avenue
New York, New York

Council of American Artist Societies
112 East 19th Street
New York, New York
(82 U. S. Societies)

The Fashion Group
9 Rockefeller Plaza
New York, New York 10020

Guild of National Science Illustrators
P.O. Box 652
Ben Franklin Station
Washington, D.C.

Industrial Designers Society of America
1750 Old Meadow Road
McLean, Virginia 22101

Institute of Business Designers
Suite 2705
1350 Avenue of the Americas
New York, New York 10019

Interior Design Education Council
c/o Art Department
Virginia Commonwealth University
901 W. Franklin
Richmond, Virginia 23220

International Association of Clothing Designers
12 S. 12th Street, Room 1512
Philadelphia, Pennsylvania 19107

International Graphic Arts Education
1 Lomb Memorial Drive
Rochester, New York 14623

National Academy of Design
1083 Fifth Avenue
New York, New York 10028

National Association of Schools of Art
50 Astor Place
New York, New York 10003

National Society of Interior Designers
Suite 700
157 West 57th Street
New York, New York 10019

Society of American Graphic Artists
1083 Fifth Avenue
New York, New York 10028

United Scenic Artists, Local Union 829
268 West 47th Street
New York, New York 10036

JOB TITLES IN VISUAL ARTS AND CRAFTS

I. Commercial Art: Visual Communications

. Illustration

Illustrator
General illustrator
Technical illustrator
. Fashion artist
Cartographer
Cartoonist (printed media)
Colorer
Medical illustrator
Calligrapher
Courtroom artist
Cartoonist (motion picture, TV)
Scenic artist
Architectural renderer

. Graphic Design

Graphic designer
Production manager, Advertising
Director, Art
Book designer
Cover designer
Typographer
Layout planner
Paste-up planner
Mechanicals planner
Television graphic artist

. Printing Process

Printer
Compositor
Lithographer
Etcher
Silkscreen printer
Screen maker (photographic process)
Photoengraver
Engraver
Music grapher
Stripper
Color separator

. Displays and Signs

Manager, Displays
Display designer
Display artist
Director, Merchandising Display and Specialties Department
Merchandise displayer
Display assembler
Sign designer
Diorama model maker
Sign painter
Sign writer, hand

. Photography

Photographers

Photographer
Photographer, News
Photographer, Commercial
Photographer, Protrait
Photographer, I.D. Bureau
Photographer, Scientific and Biological
Photographer, Aerial
Photographer, Finish
Photographer, Candid
Photo Researcher
Photographer, Photoengraver
Photographer, Lithographer

Photo-Technicians

Photo technicians
Film developer
Copy camera operator
Photo finisher
Negative cutter and spotter
Photo checker and assembler
Photograph retoucher
Colorist, photography

Television

Camera operator
Set designer
Light technician
Graphic designer
Director

Note: All titles have been developed by U.S. Department of Health, Education, and Welfare.

II. Commercial Art: Product Design

. Industrial Design

Industrial designer
Commercial designer
Model maker
Package designer
Industrial renderer
Patternmaker
Sample maker
Model builder
Designer with specialities in
  Furniture
  Cabinetry
  Fixtures
  Metalwork
  Musical instruments
  Jewelry and flatware
  Glassware
  Tile
  Toys

. Textile and Fashion Design

Textile designer
Cloth designer
Screen printer
Clothing designer (also designer of furs, hats, shoes, handbags)
Copyist
Tailor
Dressmaker
Wallpaper designer
Carpet designer

III. Commercial Art: Environmental Design

. Architecture

Architect
Architectural drafter
Renderer, architectural
Architectural modeler

. Landscape Architecture

Landscape architect
Landscape drafter

. Environmental Designer

Urban planner

. Interior Designer

Interior designer
Stage set designer
Miniature set designer

IV. Fine Arts

. Fine Artists

Two-Dimensional Art

Painter
Drafter
Muralist
Photographer
Printmaker
Calligrapher

Three-Dimensional Art

Sculptor

Other "Mixed" Media Art

Experimental materials artist
Independent filmmaker
Computer artist
Media artist
Experimental artist

. Craftspersons

Craftspersons in:

Wood
Clay
Leather
Stone
Plastic
Horn/Bone/Shell
Fiber
Glass
Metals
Print
Miscellaneous/Combined Materials
Miscellaneous/Other Materials

V. Crafts

. Hand Crafts/Craftspersons and Designers

Wood Design

- Cabinet maker
- Woodcarver
- Boatbuilder
- Wood sculptor
- Instrument maker

Clay Design

- Ceramicist
- Potter
- Tile designer

Leather Design

- Leather worker
- Leather seamstress, custom
- Shoemaker, custom
- Sandal and belt maker
- Saddle and harness marker

Stone Design

- Sculptor
- Carver
- Worker

Plastic Design

- Sculptor
- Jeweler

Horn/Bone/Shell Design

- Carver
- Jeweler
- Scrimshaw Artist

Fiber Design

- Weaver
- Basket maker
- Spinner
- Dyer
- Needleworker
- Quilt maker
- Fabric printer
- Macramaist
- Nonloom fiber worker
- Rug maker
- Custom sewer

Glass Design

Glass blower
Glass decorator
Stained glass worker
Mosaicist

Metal Design

Silversmith (Goldsmith)
Jeweler
Metal sculptor
Blacksmith
Enamelist

Printmaking

Bookbinder, hand
Small press printer

Miscellaneous/Combined Materials

Bread maker
Toy maker
Crafts tools designer

Miscellaneous/Other Materials

Floral designer
Candlemaker
Paper craftsperson
Decoupage worker

. Technical Services, Fine Arts

Picture framer
Mat cutter
Fine Arts printer

VI. Art Education

. Teaching

Faculty member, College or University
Teacher, secondary school
Teacher, elementary school
Teacher, kindergarten
Teacher, nursery school
Teacher, visiting
Instructor, vocational training

Director, art department
Teacher, adult education
Director, vocational training
Director, special education
Art supervisor
Educational specialist
Instructor, on-the-job training

Settings: It is impossible to list teaching jobs by subject, as *every* skill and every possible combination and permutation of skills which appear in these listings can conceivably be taught. Instead, teaching jobs will be listed by setting rather than by subject.

The above teachers can work in:

Pre-, private, or public schools
Elementary, junior, or senior high schools
Specialized schools
Community centers
Junior colleges
Colleges
Universities
Trade schools
Army bases
Recreation departments
Educational TV stations
Prisons
Private studios
Workshops

. Museum Education

Museum educator
Museum designer
Publications specialist
Publicity specialist (Public Relations)
Conservator

. Writers About Art

Critic
Art reporter
Art reviewer

. Art Librarian

. Art Therapy

Art therapist
Occupational therapist
Expressive or play therapist

VII. Arts Business and Management

. Arts, Crafts Management

Arts manager
Director, art/crafts Organizations, government or private
Researcher, art/crafts organizations, government or private
Administrator, art/crafts organizations, government or private
Public relations worker, art/crafts organizations, government or private

. Exhibiting and Sales and Promotion

Gallery director
Gallery assistant
Private dealer
Collections "advisor"
Director, crafts center
Director, crafts fair
Craftspersons' agent
Artists' agent
Publicist
Appraiser
Cataloger
Owner, retail shop or gallery
Manager, photogallery or studio
Salesperson, art/crafts
Salesperson, signs and displays
Director, hobby shop
Sales, import crafts
Arts, crafts supply salesperson
Designer, shop or gallery exhibits

Note: All titles have been developed by U.S. Department of Health, Education, and Welfare.

JOB TITLES AND DESCRIPTIONS IN COMMERCIAL ART*

ILLUSTRATION JOBS

Most illustrators specialize. Here are some of the major specialties within the field:

Illustrator — a graphic artist who creates visual representations or decorative patterns

General illustrator — does all kinds of illustration work

Technical Artist — specializes in illustrating technical subject matter

Fashion Artist — specializes in any aspect of fashion

Cartographer — draws maps

Cartoonist — (printed media) draws any kind of cartoon or cartoon strip

Colorer — hand colors designs on printed materials such as maps or calendars

Medical Illustrator — specializes in drawing anatomical or biological subjects for use in medical study

Calligrapher — does hand lettering

Courtroom Artist — draws illustrations of events taking place during a court trial, usually when cameras are forbidden in the room

Architectural Renderer — specializes in perspective drawings of buildings

Cartoonist (motion pictures, TV) — draws and animates cartoons to be filmed

Scenic Artist — draws and paints scenery and backgrounds for movies and TV

Printer — does the actual work of reproducing visual images in multiple copies

Compositor — sets and arranges type, prior to the actual printing of material

Lithographer — works with lithographic techniques

Etcher — works with etching techniques

Silkscreen printer — works with silkscreen techniques

Screenmaker, photographic process — photographically produces the stencils used in silkscreen printing

Photoengraver — prepares material for printing, using photoengraving techniques

Engraver — works with engraving techniques

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*Note: Developed by the U.S. Department of Health, Education, and Welfare

Music Grapher — prepares master copies of musical notations for photographic reproduction

Stripper — prepares photo-printed material for reproduction

Color Separator — separates the colors in a multicolor print and prepares separate printing plates for each individual color

GRAPHIC DESIGN OCCUPATIONS

Graphic Designer — designs two-dimensional visual materials to be printed

Production Manager, Advertising — directs the work of preparing advertisements for printing; makes final decisions about artwork, photography, and design; and instructs the typesetters and printers on how the finished work will look

Director, Art — designs artwork and supervises workers preparing layouts and illustrations and photographs for printing; directs all phases of work in the art department; and coordinates art department activities with the other business departments

Book Designer — specializes in planning the appearance of books

Cover Designer — specializes in designing covers for books, magazines, etc.

Typographer — chooses and arranges the type styles for printed materials

Layout Planner — plans and spaces the arrangement of type and illustrative materials for printed materials

Paste-up Planner — works for the layout person, cutting and arranging elements of the printed design

Mechanicals Planner — prepares the work of the layout person in final form, ready for printing

JOBS IN SIGNS AND DISPLAYS

Display Manager — supervises the design and construction of graphic displays

Display Designer — works under the supervision of the display manager, designing the appearance of a display

Display Artist — designs and paints backgrounds and props used in displays

Director, Merchandising Display Department — supervises the design and manufacturing of paper display units used to advertise products

Merchandise Displayer — arranges props and store merchandise in displays to attract customer attention

Display Assembler — designs and constructs models of advertising displays according to the instructions of a display manager or a client

Sign Designer — draws designs for signs, including backgrounds, colors, and other details

Diorama Model Maker — does carpentry work on custom displays according to designer's blueprints

Sign Painter — does all aspects of work on painted signs, either for reproduction or for individual custom-made signs

Sign Writer, Hand — paints, prints, or draws signs used for display purposes

Sign Builder — constructs neon, plastic, and wood signs

JOBS IN PHOTOGRAPHY

This list of jobs pertains to still photography. Motion picture camera work is covered in another list.

Photographer — operates cameras and develops pictures for artistic or commercial purposes

News Photographer — photographs people and events to illustrate news stories; might specialize in one area such as sports

Commercial Photographer — photographs people, merchandise, fashion, or any commercial subject matter

Portrait Photographer — specializes in photographing people

I.D. Bureau Photographer — photographs people, events, and evidence for use by government agencies

Biological and Scientific Photographer — photographs biological specimens, microscopic slides, and other technical subject matter for use by scientists and medical doctors

Aerial Photographer — photographs sites from airplanes for news or for scientific, engineering, architectural, or military purposes

Finish Photographer — photographs the finish line at a race to determine the winner

Candid Photographer — takes candid photographs of people in order to sell them copies of the photographs

Photo Researcher — locates and maintains files of photographs used for illustrative and research purposes

Photographer, Photoengraving — photographs material to be transferred to printing plates and used in the photoengraving process of reproduction

Photographer, Lithographic — photographs material to be transferred to printing plates used in the lithographic process of reproduction

JOBS IN PHOTOTECHNOLOGY

This list does not include the people whose work is so technical that it is not really art-related. The people on this list do use some kind of artistic skill or judgment in their jobs. Phototechnicians generally work at salaried jobs. Much of the work is rather routine.

Phototechnician — is involved in the detailed work of photography and photo reproduction

Film Developer — processes photographic film with darkroom equipment to produce negatives or positive prints

Copy Camera Operator — uses a copy camera to make enlarged or reduced copies of printed materials such as photographs or drawings

Photo Finisher — does all the work involved in drying, trimming, and mounting photographic prints

Negative Cutter and Spotter — examines and retouches film negatives to prepare them for printing

Photo Checker and Assembler — examines negatives or prints for defects; suggests corrections to be made; and assembles and packs the finished product

Photograph Retoucher — retouches photo negatives and prints to accentuate attractive features and eliminate defects

Colorist, Photography — colors photographs with paint to make them more natural, or lifelife, in appearance

SPECIALIZED JOBS WITHIN INDUSTRIAL DESIGN

Industrial design is a general term used to describe several kinds of jobs. Some industrial designers do all the activities on this list, but most specialize. These are some of the specialized jobs within the field of industrial design:

Industrial Designer — designs the appearance, form, and/or function of manufactured products

Commercial Designer — specializes in the styling and decoration of products

Model Maker — constructs scale models or products, usually in clay, to visualize the designer's plans in three dimensions

Package Designer — specializes in designing the appearance and/or form of packaging materials

Industrial Renderer — makes detailed perspective drawings of products to be manufactured

Pattern Maker — draws the master pattern of a product, following the specifications of the designer

Model Builder — makes and assembles parts for models of furniture

Sample Maker — fabricates samples of small products such as jewelry

Industrial designers may also specialize in some particular kind of product such as:

Furniture
Metalwork
Jewelry
Musical instruments
Glassware
Tile
Pottery and porcelain
Toys

JOBS IN TEXTILE DESIGN

Textile and fashion designers are also part of the product design profession. These are some major textile jobs for commercial designers:

Textile Designer — designs any aspect of any textile product

Cloth Designer — designs the weave, pattern, color, or manufacturing procedure for cloth

Screen Printer — prints designs on the textiles using silk-screening process

Clothing Designer — creates designs and prepares patterns for clothing; may specialize in some aspect of the design process or some kind of clothing such as fur, hats, shoes, handbags

Copyist — studies clothing fashions and designs styles based on competitors' styles, or incorporates popular features into original designs

Tailor — designs and/or makes custom tailored clothing

Dressmaker — specializes in making women's custom clothing

Wallpaper Artist — designs patterns, textures, and color schemes for wall paper

Carpet Designer — specializes in the design of carpets and rugs

JOBS IN ENVIRONMENTAL DESIGN

There are so many kinds of specialities within the environmental arts that it would be impossible to name them all. Here are some of the major job titles:

Architect — designs buildings

Architectural Drafter — prepares detailed drawings of architectural sketches, using mechanical drawing devices

Architectural Renderer — makes perspective drawings of buildings

Architectural Modeler — makes three-dimensional models of architectural plans

Landscape Architect — designs outdoor areas, such as parks or gardens

Urban Planner — develops plans for the construction and utilization or resources and buildings in a town or city

Interior Designer — specializes in decorating and designing indoor spaces

Landscape Drafter — specializes in landscape architecture

Sample Questionnaire

MARKET RESEARCH SURVEY

Your preferences for certain types and styles of product will help us provide the kind of product and services that you need. Please check your response to each question listed below:

Male ___ ___ Female _____

Age: 15-20 _____ 21-25 _____ 26-30 _____ over 30 _____

Hair color: Brown _____ Blonde _____ Red _____ Black _____

Skin color: Fair _____ Medium _____ Dark _____

Favorite clothing color: Red ___ ___ Orange _____ Yellow _____ Green _____

White _____ Blue _____ Gray _____ Black _____

Do you wear prescription glasses? Yes _____ No _____

How often do you wear sunglasses? Everyday _____ Sometimes _____ Never _____

How many pairs do you own? One _____ Two _____ Three or more _____

What shade of lens do you prefer? Amber _____ Yellow _____ Green _____

Rose _____ Brown _____ Blue _____

What kind of frames do you prefer?

Thick _____ Thin _____ Metal _____ Plastic _____

Bright colors _____ Pastels _____ Ornamented _____ Plain _____

SAMPLE EVALUATION FORM FOR PHOTOS

COMPOSITION:		Photo 1	Photo 2	Photo 3	Photo 4	Photo 5
1. Selection and arrangement of subject matter	Good/Excellent					
	OK					
	Fair/Poor					
2. Design — lines, shapes	Good/Excellent					
	OK					
	Fair/Poor					
3. Angle or point of view	Good/Excellent					
	OK					
	Fair/Poor					
4. Framing	Good/Excellent					
	OK					
	Fair/Poor					
5. Interest	Good/Excellent					
	OK					
	Fair/Poor					
Comments:						

TECHNIQUE:		1	2	3	4	5
1. Focus — camera and enlarger	Good/Excellent					
	OK					
	Fair/Poor					
2. Exposure — negative and print	Good/Excellent					
	OK					
	Fair/Poor					
3. Contrast — negative and print	Good/Excellent					
	OK					
	Fair/Poor					
4. Depth of field	Good/Excellent					
	OK					
	Fair/Poor					
5. Dust and scratches	Good/Excellent					
	OK					
	Fair/Poor					
Comments:						
Grade:						

PHOTOGRAPHY: SAMPLE TEST QUESTIONS

Name _____

Directions: Put yourself in each of the six situations below, and answer the questions.

Situation 1: You are shooting with an instamatic camera.

1. What type of camera is it? _____ _____.
2. What type of shutter does it contain? _____.
3. The pupil of the eye is equivalent to what part of the instamatic? _____
4. On most instamatics, there are no controls or adjustments for setting _____ or for _____.
5. In composing or framing your picture, you use the _____ of the instamatic.

Situation 2: You are shooting with an SLR.

1. The type of shutter usually found in an SLR is _____.
2. To determine the focal length of the lens of your camera, you measure the distance from the _____ to the _____.
3. Most models of the SLR type of camera use what size film? _____
4. The light entering your SLR is reflected by means of a _____ up to the _____.
5. When you look through the viewfinder of your SLR, you are really looking through the _____ _____.

Situation 3: You have been assigned to cover the Peary-Springbrook game. Unfortunately, you have forgotten your light meter, but you do know that your ASA rating is 125.

1. Using the general rule of thumb for exposure on a bright, sunny day, you set your shutter speed at _____ and your f/stop at _____.
2. Your are sitting in the stands. If you take a picture in which the fans, the cheerleaders, and the football players are *all* in focus, you have a great amount of _____.
3. You want a shot of a person two rows in front of you to be in focus in your picture. In other words, you want to decrease your depth of field. What do you do to accomplish this? _____ _____.
4. During the game, you notice that the sun occasionally goes behind a cloud. You realize that the brightness range is _____ than it is when the sun is shining.

5. You want a close-up of the action on the field, but you are not permitted to go on the field. Your solution is to reach into your camera bag and select a lens with a _____ focal length.

Situation 4: You are in the darkroom.

1. When you get paper out, what kind of light should be in the darkroom? _____
_____

2. You have had your print in the stop bath for 30 seconds. What do you do next? _____
_____

3. Your are mixing Dektol. You have put 3 cups of Dektol in the tray. What do you do next? _____
_____

4. Your negatives are extremely thin. What can you do to compensate for this? _____
_____

5. What does a test strip tell you?_____
_____

Situation 5: It is a bright, sunny day. The basic reading from your light meter is 1/125 at f/8.

1. To maintain this same exposure, but with increased depth of field, where would you set your shutter speed and f/stop?_____

2. What is your ASA rating? _____

3. You change your exposure setting to 1/250 at f/5.6. What have you done to the depth of field?
_____

4. When you change your f/stop from 2.8 to 16, you are_____.

5. When you change your shutter speed from 1/30 to 1/60, what are you, in effect, doing?
_____

Situation 5: You are creating an artistic photograph.

1. You want a graceful, lyrical, or beautiful feeling in your print. You photograph an object or objects with mostly_____ lines.

2. To improve your composition, you can crop in two ways:

   1._____.

   2._____.

3. For your portfolio, or for presentation and exhibition of your prints, you should_____
_____.

4. When the center of interest, or the main object, is located directly in the center of the print, what feeling is created? _____

_____

5. Good negatives make good prints. Before printing, what should you do to your negatives?

_____.